

THE HISTORY, NATURE, AND EXTENT OF THE MAJOR
LOGGING OPERATIONS IN ITASCA STATE PARK (1901-1919)

A THESIS
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA

By
Norman Edward Aaseng

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE

DECEMBER 1976

ACKNOWLEDGEMENTS

The author wishes to express his sincere appreciation to his advisor, Dr. Henry L. Hansen, for his helpful suggestions and constructive criticism during the course of this study. Appreciation is also extended to Dr. Vilis Kurmis and Dr. Edward J. Cushing for their editorial assistance in the preparation of the manuscript.

Considerable assistance offered throughout this study by William A. Patterson is also greatly appreciated.

Grateful acknowledgement is made to John Dobie for providing the use of his research notes on The Itasca Story; to Ida Bakken, curator of the Clearwater County Historical Society, Harry Brannigan, Gus Wilander, and Elmer Walde for providing much of the historical background for this study; and to the staff of the Minnesota Historical Society and University of Minnesota Archives, and officials of Becker, Beltrami, Clearwater, and Hubbard counties for their cooperation and assistance.

Financial support for this project has been received from a variety of sources, including the College of Forestry, the University of Minnesota Agricultural Experiment Station and the Division of Parks and Recreation in the Minnesota Department of Natural Resources. The author is grateful for this assistance without which the project could not have been undertaken.

TABLE OF CONTENTS

	Page
Acknowledgements	i
Table of Contents	ii
List of Figures	iv
List of Tables	v
I. INTRODUCTION	1
II. PURPOSE	4
III. STUDY AREA	5
IV. HISTORICAL SETTING	7
V. METHODS USED	13
A. Record Of Deeds	13
B. Eyewitness Accounts	16
C. County Tax Records	17
1. Ownership	18
2. Year Logged	18
3. Timber Estimate	22
4. Additional Information	22
D. Company Records	23
E. Comparisons With Pre-Logging Descriptions	23
F. Field Checking	28
VI. RESULTS	30
A. Areas Logged	30
B. Year Cut	32
C. Amount Cut	33
D. Cutting Specifications	34
E. Slash Disposal	36
F. Road Construction	37
G. Flooding	37
VII. SUMMARY	39
References Cited	40
APPENDIX A	A-1
List of Figures	A-1
List of Tables	A-1
Explanation of Summary of Logging Information	A-2
Index to Summary of Logging Information	A-6
Summary of Logging Information by Legal Descriptions	A-7
Data Sources	A-22

	Page
APPENDIX B	B-1
List of Figures	B-1
List of Tables	B-1
I. Brainerd Lumber Company	B-2
A. Introduction	B-2
B. Logging Policies	B-2
C. "Itasca Park Contract" - 1901-06	B-3
II. Red River Lumber Company	B-6
A. Introduction	B-6
B. Logging Policies	B-6
1. Cutting Specifications	B-6
2. Slash Disposal	B-7
C. Logging Contracts	B-7
1. "Mississippi River Contract" - 1903-04	B-7
2. "Itasca Park Contract"	B-7
a. 1905-07	B-8
b. 1911-14	B-10
III. Pine Tree Lumber Company	B-14
A. Introduction	B-14
B. Logging Policies	B-15
1. Cutting Specifications	B-15
2. Slash Disposal	B-16
C. Logging Contracts	B-17
1. "Two Inlet Contract"	B-17
a. 1912-13	B-17
b. 1913-15	B-18
2. "Lake Itasca Contract"	B-18
a. 1915-17	B-19
b. 1917-18	B-20
3. "Elk Lake Contract" - 1918-19	B-20
IV. Other Lumber Companies	B-26
A. H. C. Akeley Lumber Company	B-26
B. F. W. Bonness & Company	B-26
C. Grand Forks Lumber Company	B-26
D. Crookston Lumber Company	B-27
E. Nichols & Chisholm Lumber Company	B-27
References Cited - Appendix B	B-30
APPENDIX C	C-1
List of Tables	C-1
Salvage Logging	C-2
References Cited - Appendix C	C-6

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	The original boundaries of Itasca State Park and later additions.	6
2	Location of the major forests of Norway and white pine in Minnesota based on the General Land Survey Records. (After Marschner, 1930).	8
3	Ownership of land not in control of the park at the start of logging operations in 1901.	9
4	The location of the cut-over areas (red horizontal strips) and the remaining major pine stands (dark green) in 1899, two years before the start of logging operations in the park (Ayres, 1899).	11
5	Land acquired by the park before logging operations began in 1901.	12
6	Graph showing the decrease in the assessed "timber value" following logging.	20
7	A comparison of pre-logging forest descriptions with the present forest cover in section 14 143-36. a) Location of pine stands based on Brower's (1900) timber survey. b) Shaded areas indicate land which was under the ownership of lumber companies. Diagonal striping indicates the area cut over as determined by comparisons with c), the present location of the pine stands (After Meyer, 1966).	26
8	Graph showing the variability in the number of trees per acre of various tree diameters at breast height needed to account for 250 M board feet (Data from Woolsey, 1914).	27
9	Area logged in Itasca State Park during the major logging operations from 1901 to 1919.	31

LIST OF TABLES

<u>Table</u>		<u>Page</u>
I	Summary of Acreage Logged in Itasca State Park During the Major Logging Operations From 1901 to 1919.	32

I. INTRODUCTION

The development and character of the forests covering Itasca State Park are the result of several factors that have influenced the landscape during the past 45,000 years. These include glaciation, climatic changes, fire, windstorms, animal populations, forest pathogens, and man's activities. All have probably modified the forests to some extent although their effects vary greatly in degree.

An extensive knowledge of the history of these factors is of value to ecologists studying the vegetation of the park. The ecological history is needed for an accurate interpretation of the present vegetation and for analysis of the long-term successional trends. In addition, an understanding of the history of the "natural" and "man-caused" factors is helpful in determining management policies to promote the restoration of pre-settlement biotic communities and their maintenance under conditions simulating "natural" disturbances.

Research into the history of many of the factors which have influenced the park's vegetation has been carried out. A summary of the history of upland forest communities is provided by Hansen et al. (1974). The glacial history has been compiled by Wright and Rhue (1965). Palynological studies by McAndrews (1966) and Janssen (1967) have provided information on the climatic changes since the last glacial retreat. The fire chronology from 1623 to 1971 has been worked out by dendrochronology studies by Frissell (1971). No comprehensive summary of windstorms has been carried

out. Some information on blowdowns can be obtained from research papers (Lundgren, 1954), Lake Itasca District Ranger Station records, and from people who have been acquainted with the park over the years. There have been several accounts of animal overpopulations in the past 75 years. These include beaver (Caster canadensis Kuhl) by Sargeant and Marshall (1959), deer (Odocoileus virginianus borealis Miller) by Dobie (1959) and Ross et al. (1970), and porcupine (Erethizon dorsatum L.) by Anfang (1972). Infestations by the larch sawfly (Pristiphora erichsonii Hartig) have been reported by Ruggles (1910, 1911). The summary by Hansen et al. (1974) of the control program history for white pine blister rust (Cronartium ribicola Fisher) is the only information available on tree diseases in the park. The effects of man can be divided between the activities of native inhabitants and those of European man. Information concerning the activities of prehistoric man in the park has been obtained by Shay (1971), while more recent activities of native inhabitants have been reported by Brower (1898) and Frissell (1971). Accounts of European man's activities, which include logging and management practices, can be obtained from Brower (1904), Dobie (1959), and Hansen et al. (1974). The activities of European man are also responsible for variations in fire frequency, animal overpopulations, and the introduction of insects and tree diseases.

Most significant in determining the composition of the park's present forests were climatic changes, fire, and logging operations. Of these three factors, however, the current information available on the logging history has not heretofore been studied

from an ecological viewpoint. Only generalized information about the logging operations exists. A detailed study of the logging history is needed to help complete the ecological history of the park forests.

II. PURPOSE

The purpose of this study was to describe and quantify the logging disturbance in Itasca State Park. Of particular interest were the logging practices that were ecologically significant in changing or modifying the early forests. For each of the park's 763 lots and forties an attempt was made to determine:

- 1) if commercial logging had occurred, and if so,
- 2) the year logging had occurred,
- 3) what cutting specifications were used (e.g., species, minimum sizes, etc.),
- 4) how much timber was cut on specific tracts (in terms of board-foot volumes indicating the extent of logging),
- 5) post-logging practices (method and season of slash disposal).

Of general interest were localized disturbances due to logging-road construction, and flooding due to damming of lakes for log drives.

III. STUDY AREA

Itasca State Park is located in the southeast corner of Clearwater County and extends into Hubbard and Becker counties. The study area includes all land under park ownership as of 1966, which totals approximately 32,000 acres. The area is comprised of 763 lots and forties from five townships: T.142N.-R.35W., T.142N.-R.36W., T.143N.-R.35W., T.143N.-R.36W., and T.144N.-R.36W.

Because the park's boundaries changed during its development, it is necessary to define the boundaries as they existed while logging was being conducted. The park was founded in 1891 and originally consisted of 35 sections (figure 1). This area and additional tracts added in 1901 and 1903 made up the park during the time of logging operations. Following logging the boundaries were further expanded. To avoid confusion, these later acquisitions are referred to as "west", "north" and "east annexes".

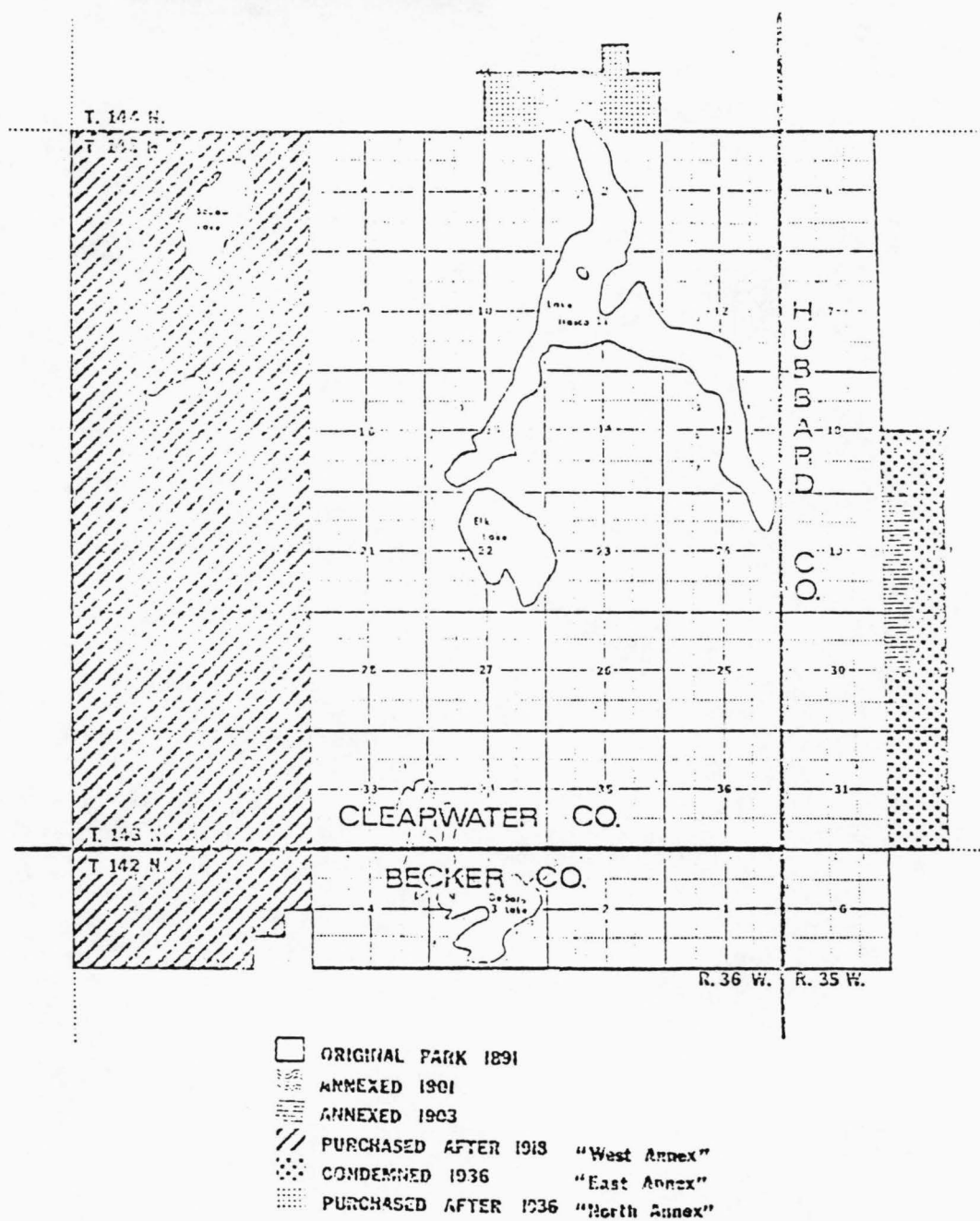


Figure 1. The original boundaries of Itasca State Park and later additions.

IV. HISTORICAL SETTING

By the end of the nineteenth century, much of the white pine forests of Minnesota had been logged. Anticipating the inevitable depletion of these prime pinelands, the lumber companies and land speculators had turned to the more marginal and scattered forests of Norway or red pine^{1/} (Pinus resinosa Ait.) and white pine (Pinus strobus L.) in north-central Minnesota, which included Itasca State Park (see figure 2). It was expected that the increasing lumber prices, the expanding railroad lines, and the growing utilization of Norway pine as an inferior substitute for white pine would make logging of these scattered and more inaccessible areas profitable (Larson, 1949). In the years following the completion of the General Land Survey of the park area in 1879, timber cruisers began locating the choicest tracts of pine for their employers. The Norway and white pine stands were rarely found in concentrated blocks but, rather, scattered throughout aspen, birch, and hardwood forests or burned pine barrens. As a result, the land was purchased in non-contiguous tracts forming an intermingled land ownership pattern (figure 3). The establishment of Itasca State Park in 1891 prevented further land acquisitions within the original park boundaries although settlers and private land speculators continued to homestead the remaining tracts in the park annexes.

^{1/}Norway pine was the accepted name during this period and is used throughout this paper. More recently, red pine has been accepted by the Society of American Foresters as the correct name.

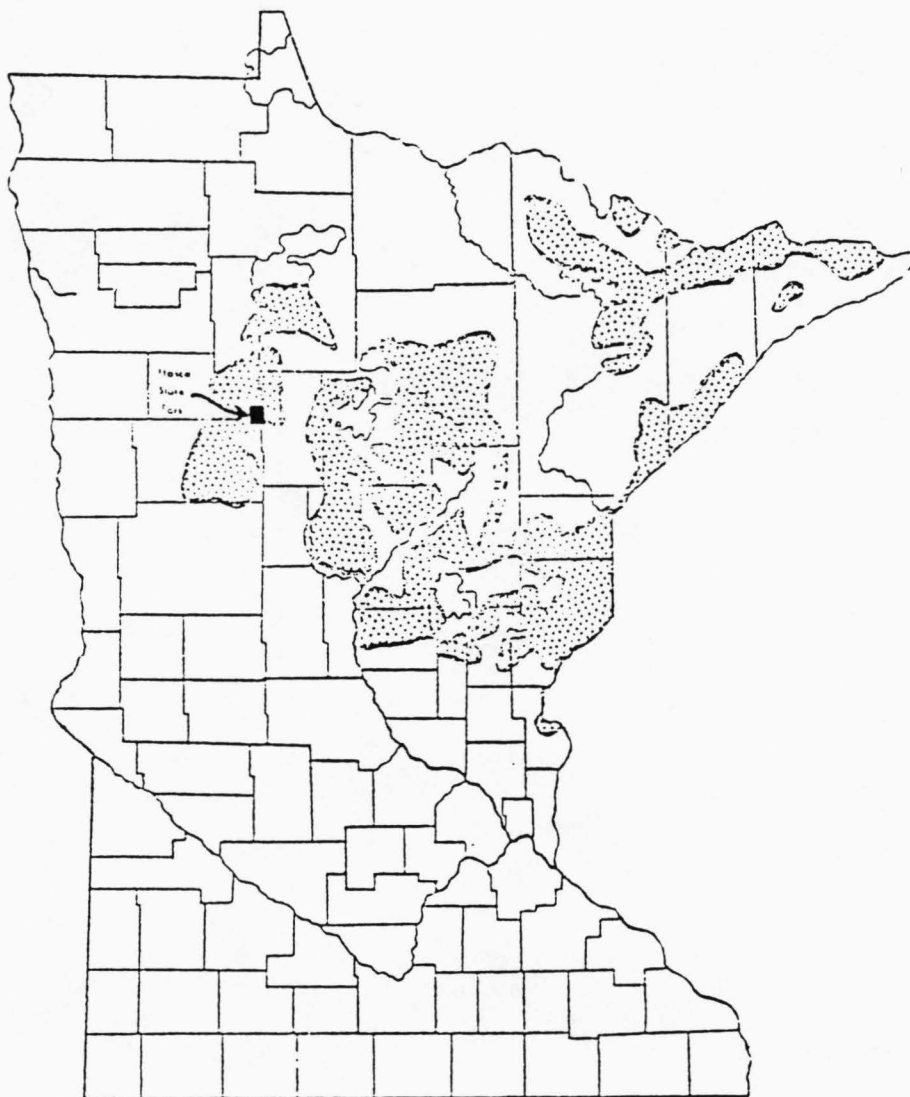


Figure 2. Location of the major forests of Norway pine and white pine in Minnesota based on the General Land Survey Records (After Marschner, 1930).

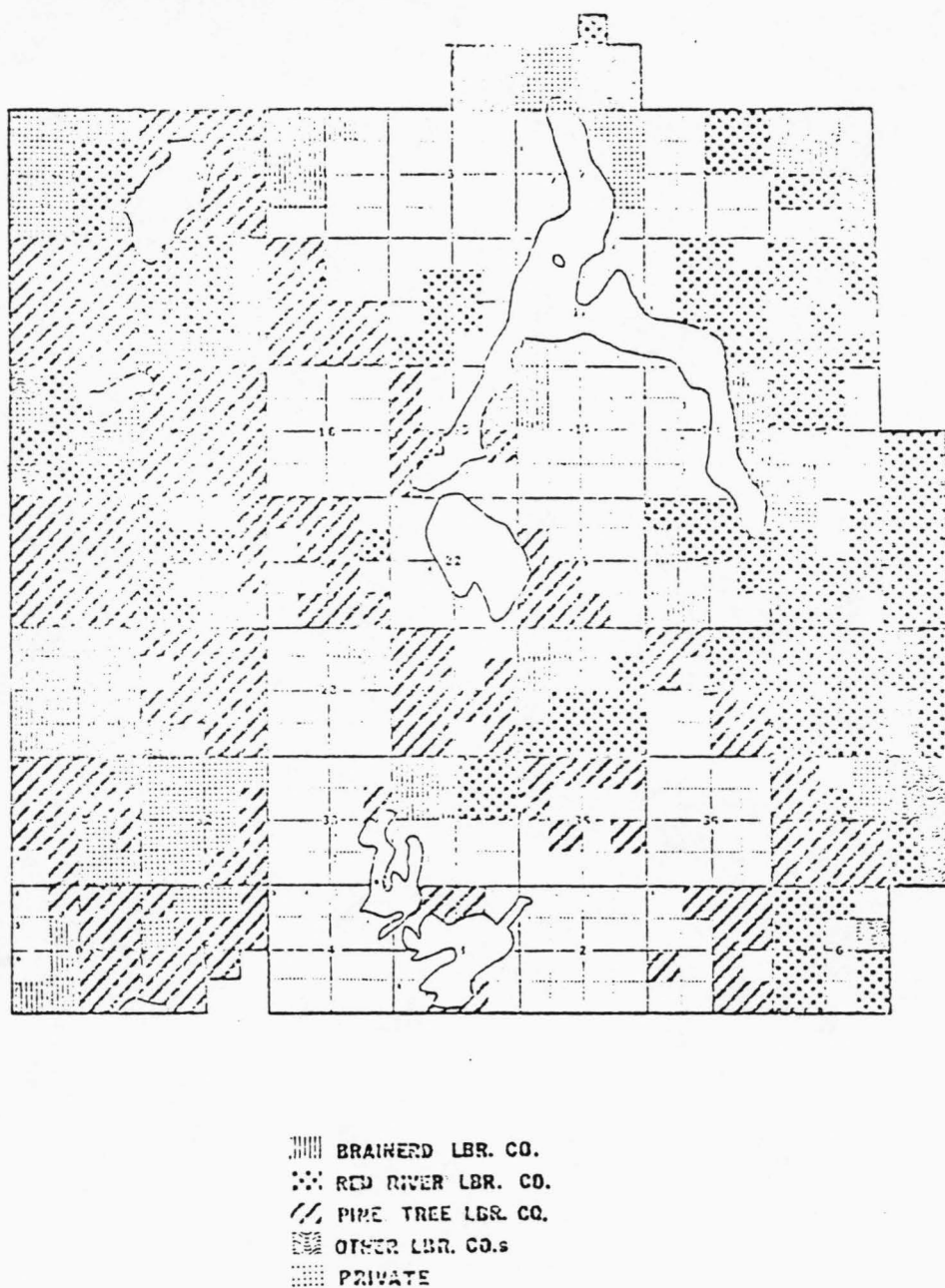


Figure 3. Ownership of land not in control of the park at the start of logging operations in 1901.

By 1899, lumber companies had begun closing in on the park area from the north and south (figure 4). At this time, the state was in possession of all federal, school, and railway company lands in the park (figure 5).

Negotiations for the acquisition of the lumber company property were being carried out with little progress. The arrival of the Brainerd Lumber Company during the winter of 1901-02 marked the beginning of logging in the park. Within the next 18 years, at least seven other lumber companies would also have set up logging operations in the original park and in adjacent lands which would later be added to the park.

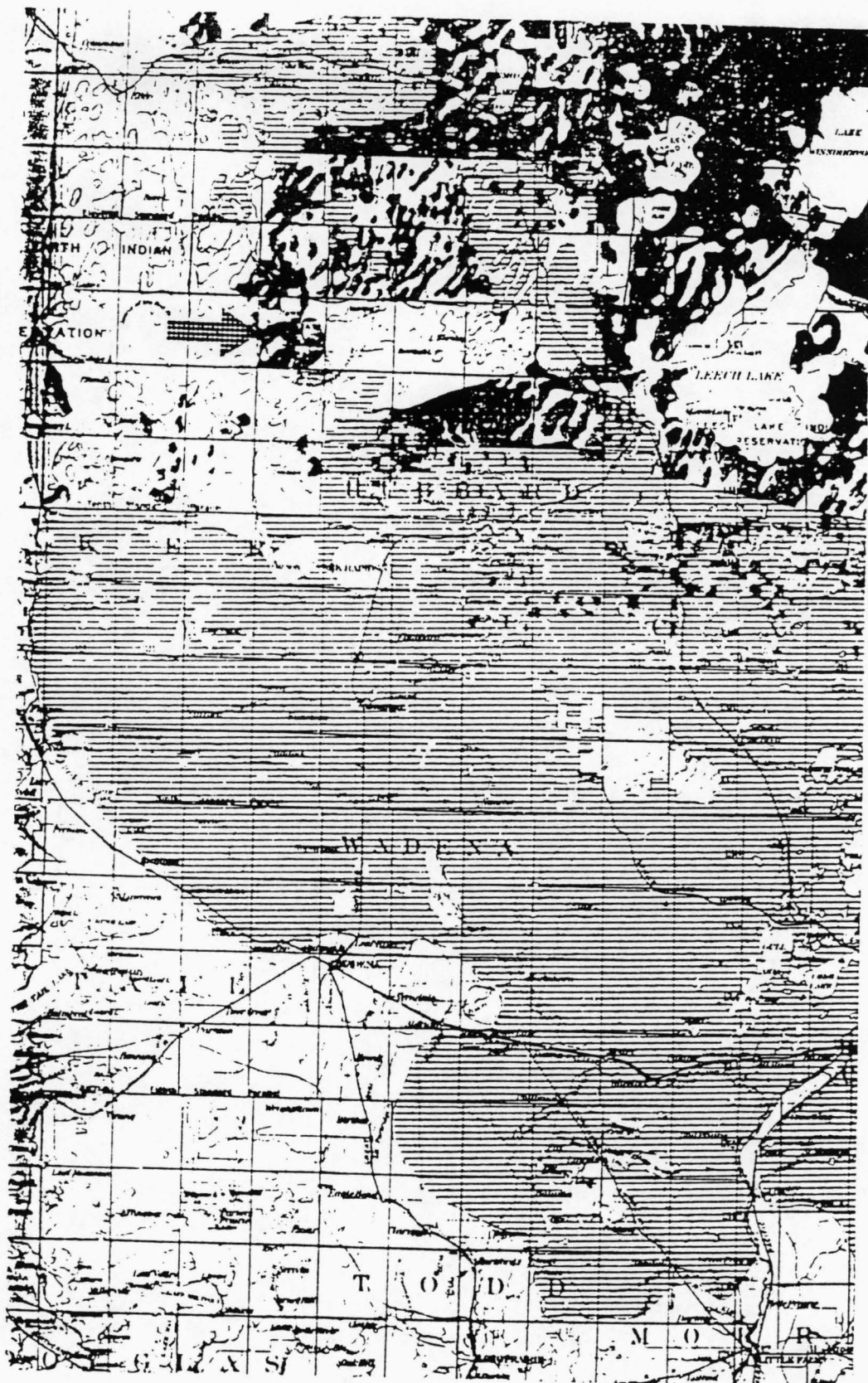
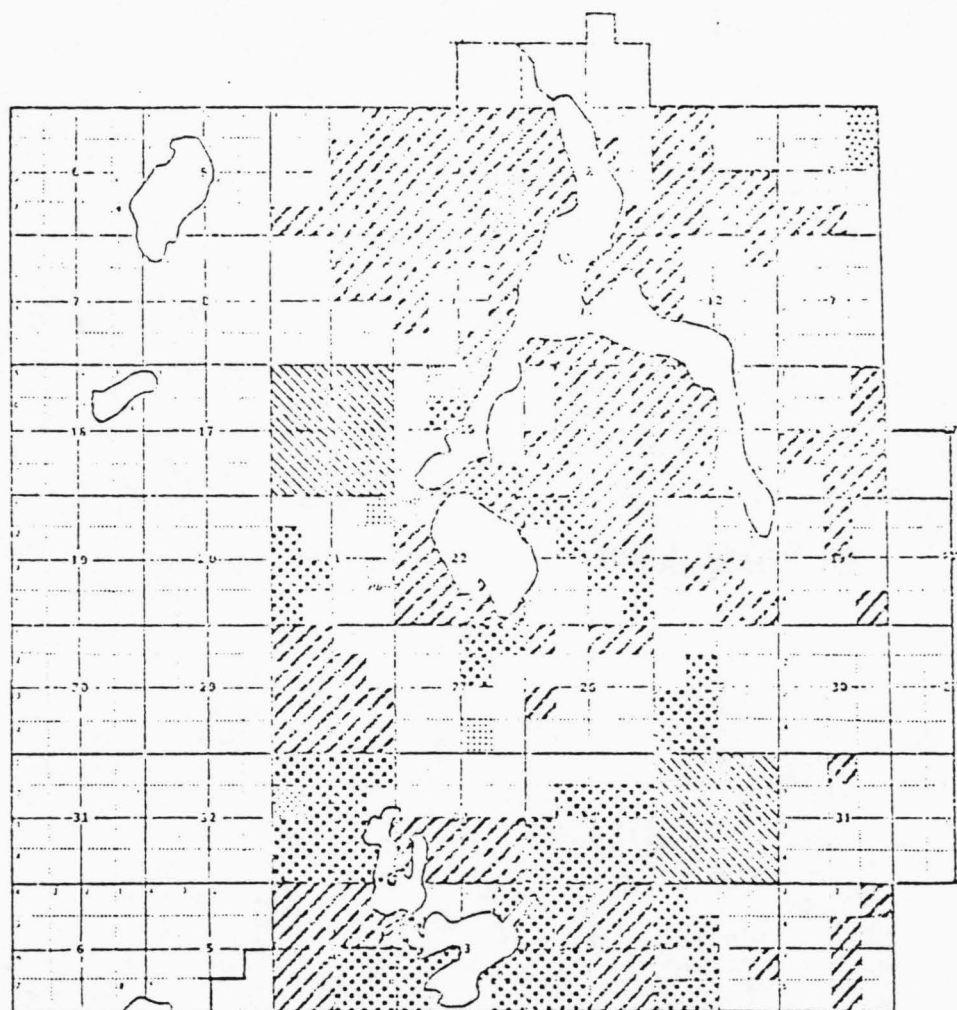


Figure 4. The location of the cut-over areas (red horizontal strips) and the remaining major pine stands (dark green) in 1899, two years before the start of logging operations in the park (Ayres, 1899).



- STATE SWAMP SELECTION
- FEDERAL LAND
- SCHOOL LAND
- NORTHERN PACIFIC R.WY. CO.
- LITTLE FALLS & DAKOTA R.WY. CO.
- GREAT NORTHERN R.WY. CO.

Figure 5. Land acquired by the park before logging operations began in 1901.

V. METHODS USED

Prior to this study the only published information available concerning logging in Itasca State Park was that presented by Dobie (1959). His popular account of the park's history generally describes the logging operations including those of the Brainerd Lumber Company, the Red River Lumber Company, and the Pine Tree Lumber Company. Although it gave no legal descriptions, the book was helpful in providing a base from which to work and narrowed the search for additional sources.

Information from numerous state and county historical society pamphlets and maps, interviews with "old-timers", and library sources was helpful in providing a general background of the many aspects of logging operations in the park area during the early 1900's. However, only sources that provide specific data documenting the park's logging history are discussed here. Included are the record of deeds, eyewitness accounts, county tax records, company records, comparisons with pre-logging descriptions, and field checking.

A. Record Of Deeds

The record of deeds furnished a legal history of land ownership transactions. Included in these records were the parties involved, legal descriptions, dates, prices, and miscellaneous items of interest. From these records both direct and indirect information concerning the logging activity was obtained.

First, knowledge of the land ownership allowed the grouping of lands having a common owner and therefore a similar

history. All lands owned by the U.S. Government and by railroad companies were acquired by the state prior to logging. Likewise, all lands owned by the same lumber company in a particular locality could be assumed to have been logged within a similar period of time and under the same logging policies and specifications.

Second, the year in which a tract of land was purchased by timber interests from the federal government or a railroad company could be used as a rough approximation of the extent of the pine on the tract. Nearly all of the prime timbered areas had been purchased by the lumber companies by the early 1890's. Later, small tracts were homesteaded by settlers and private land speculators. Generally, the remaining timber was inferior but occasionally a tract was acquired that had been passed by or underestimated (Vandersluis, 1963).

Third, by following the transfers in land ownership, the years in which a tract of land was under the control of a lumber company, and therefore could have been logged, could be narrowed down. This was especially useful for lands which were acquired relatively late by the lumber companies and turned over to landholding companies after logging. For example, the Brainerd Lumber Company purchased the Cook property (see appendix A-30, #34) in December of 1904 and sold it to the John L. Smith Land Company in April of 1906. This indicates that the timber must have been cut either in the winter of 1904-05 or 1905-06. Since lumber companies were eager to

avoid paying additional property taxes once the land was logged, and because the title to the land was released in the spring immediately after the logging season, it is likely that the logging on this tract occurred during the 1905-06 season.

Fourth, the record of deeds was also used in determining whether lands acquired by the state were timbered or cut over. It was often possible to determine if timber was included by comparing the price of the transactions with the average cost per acre of logged-over land. Tracts sold to the park at a cost much higher than the average cost of land could be assumed to have included timber. In other cases, the year land was acquired was indicative of whether logging of the tract would have occurred. For instance, land acquired from the Red River Lumber Company in the east part of the park prior to their logging operations, which began in 1911, could be assumed to have included the timber. Similarly, land acquired by the park from the major lumber companies after the completion of all logging operations in 1919, such as the east annex, would have been logged.

Finally, the record of deeds often includes timber deeds. These documents were used for the transferring of timber rights to another party, usually from a private owner to a lumber company. Timber deeds did not occur frequently, but when present, they provided valuable data. They usually indicated who would do the logging and specified a completion date for operations (although extensions were possible).

Occasionally, upon completion of logging, a "Notice of Timber Cut" or a "Release of Deed" would be included. Prices quoted also provide a rough approximation of the amount of timber involved in the transaction.

B. Eyewitness Accounts

There are three main sources providing eyewitness accounts of the logging activities in the park. These include reports and correspondence from state officials who were actively involved in the welfare of the park.

J. V. Brower, first commissioner of Itasca State Park, provided an informative report of the park's early years which was published in "Itasca State Park - an illustrated history" (Brower, 1904). In this publication, Brower includes some of the early land acquisitions by the park as well as his negotiations with the lumber companies from 1891 to 1904. His observations document the first logging operations in the park during the winter of 1901-02.

State auditor S. G. Iverson was responsible for handling park matters during the first few years of logging operations. His correspondence with Thomas F. Fitzgerald, land and timber cruiser, provided a detailed account of the logging, including salvage operations, in the park from 1901-03. These papers contain plat maps indicating the cut over areas.

The State Forestry Board took over the state auditor's responsibilities in the park in 1907. Minutes of meetings, annual reports, and general correspondence contain information regarding land and timber purchases as well as the

board's regulation of logging operations in the park.

An attempt was made to obtain information from "old-timers" who had witnessed the logging operations in the park. However, most of those who were actively involved in the logging are no longer living. The old-timers who were contacted were eager to help and in a few cases provided some detailed information. However, from most of the interviews it was only possible to determine background information and general impressions of the logging in the park area. It was concluded that after fifty to seventy-five years, it is difficult to expect persons to remember specific dates, legal descriptions, timber volumes, or other detailed information that is needed for this type of study.

C. County Tax Records

The tax records of Clearwater and Becker counties are a valuable source of information for determining the logging history of the park's west annex for which there was comparatively little other information available. The county tax records are comprised of two sets of books: the tax lists and the assessment books. The tax lists contain a compilation of all taxable land within a township and, for each forty, contain assessment values upon which property taxes were based. Forties were reassessed in even-numbered years. Also included in the tax lists were the individuals or companies responsible for payment of the taxes. The assessment book is supplementary to the tax lists and lists all taxable personal property of landowners within a township. This also

includes the value of any structural improvements that were included in the total value assessed to the land in the tax lists.

1. Ownership

The tax lists provide a quick means of obtaining the land ownership of an entire township for any year as opposed to the long and tedious process required in going through the record of deeds. Also, it was found that lumber companies often paid the property taxes on land for which they held the timber rights. This was helpful since it identified which lumber company logged lands under private ownership.

2. Year Logged

More importantly, the tax records were found to be helpful in determining when a tract of land was cut over. This was possible since the assessed value attributed to each forty included the value of the merchantable timber on it. As a result, once the land was assessed as cut over, a significant drop in the total value would be expected. Since the value of the timber and the land fluctuated greatly from year to year, it is often difficult to distinguish a drop that can be attributed to logging. However, by subtracting the value of the land from the total assessed value, the remainder would be the assessed timber value. Once the timber value of a tract fell to zero, it could be assumed to have been logged of the species considered merchantable at the time.

In figure 6, the timber value of the Pillsbury land fell to zero in 1904. Since the total assessed value is determined on May 1 of even-numbered years, the land would have been logged either the winter of 1902-03 or 1903-04. Similarly, the Walker and Akeley tract would have been cut from 1906 to 1908 and the Pine Tree Manufacturing Company land from 1916 to 1918. These years correspond to the period that the various lumber companies were reported to have been in the area (Dobie, 1959). By calculating the timber values for each forty, the years in which a tract of land was cut over can be narrowed down to two logging seasons.

Although this procedure is informative for much of the area, there are several complications that limit its utility. As illustrated in figure 6, increases in the timber value can occur after the land was cut over. Although these increases are generally of little significance, at times they could affect the interpretation of the tax record data of lands which had a low timber value. These sporadic increases indicate that more than just timber was included in the calculated timber value. Examinations of the assessment book reveal that some of these increases are due to assessments against structural improvements such as cabins and farms. Other increases could be due to assessments against road improvements and other unknown assessments for which no information was found.

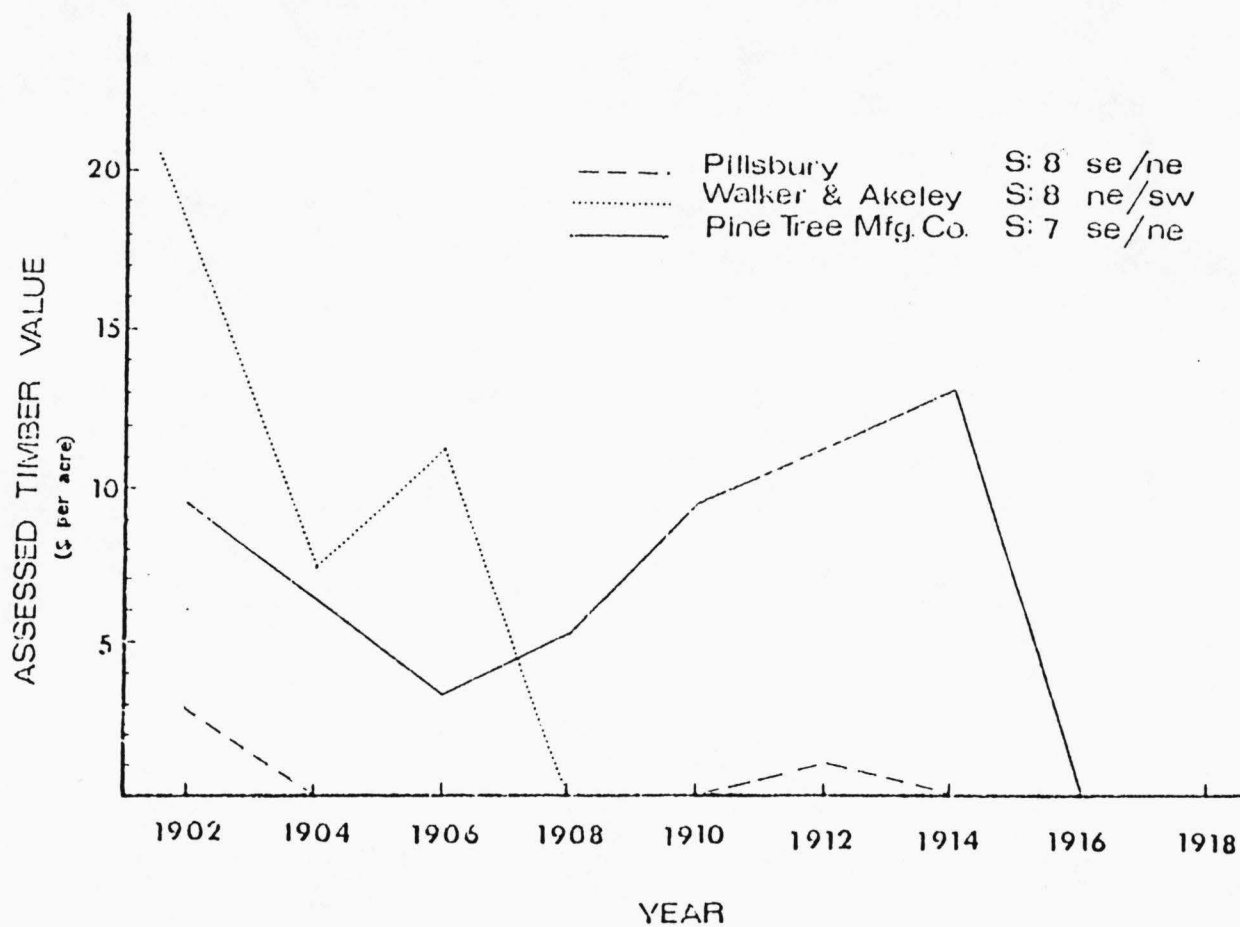


Figure 6. Graph showing the decrease in the assessed "timber value" following logging.

A more serious problem discovered while working with tax assessments was that the accuracy of these records often depended on the record-keeping ability of the tax officials. Comparisons with more reliable sources indicate that the records were most accurate in the early 1900's while later years contain several errors. The unreliability of the tax officials is supported by several letters from the Pine Tree Manufacturing Company criticizing the counties' record keeping. These letters stated that they had "considerable trouble getting the officials of Clearwater County to change assessments from timber lands to cut over lands". A similar letter indicated that the Pine Tree Lumber Company was "having a hard time getting counties to change the taxes" and added that they thought "there should be some method in the adjustment for assessments in odd years when timber is cut over before May 1st in that year". This last statement emphasizes the importance lumber companies placed on getting the lands reassessed as cut over as soon as possible to reduce payment of taxes, and indicates that the discrepancies in the tax records were more likely due to the tax officials than the logging companies.

Overall, the information provided by the tax records is very helpful, although the results should be used with caution. Whenever possible a more accurate source of information was used as the final authority.

The usefulness of the tax records is confined to the

park's west annex for two reasons. First, the timber value is of little use in the original park since the state purchased land immediately after it was cut over. With the land taken off the tax list, there is no indication of whether the timber had been logged or purchased. Secondly, the tax records for Hubbard County, which could have supplied information on the east annex of the park, were destroyed (Dobie, 1959).

3. Timber Estimate

It was hoped that the assessed timber value could be used as an indication of the amount of timber cut. However, comparisons of these values with actual timber estimates showed very little correlation between the two. It is not known what criteria were used in the assessment of the timber value. Lumber companies were careful not to disclose their estimates except for occasional complaints to tax officials regarding timber overestimates.

4. Additional Information

Depending on the discretion of the individual tax official for any given year, additional information could be furnished in the tax lists. Included in these records is a column indicating whether a lot was "timbered", "cultivated", "wild", "stoney", "hilly", and/or "level". When these descriptions were present they could be used to indicate when a tract was logged. In certain years, the tax officials also made notations in the margins to indicate a tract was recently cut over or added descrip-

tions such as "heavily timbered" or "not much timber".

However, these added bits of information are infrequent and generally available only in the early 1900's.

D. Company Records

The Immigration Land Company records contain much detailed information providing insight into the Pine Tree Lumber Company's logging operation in the park area. These papers include the Pine Tree Lumber Company officials' correspondence with the logging-camp supervisors, tax officials, company attorneys, and park officials. Occasional references are made to cut over areas, volume cut, acquisition of timber rights, timber estimates, and timber and land purchases by the state as well as company policies regarding cutting specifications and slash disposal.

Unfortunately, the Red River Lumber Company records were destroyed (Dobie, 1959), and records of other lumber companies operating in the park could not be located in any of the county or state historical societies.

E. Comparisons With Pre-Logging Descriptions

There were several tracts of land for which little or no information was found to indicate whether or not they had been cut over. This was particularly true for land under private ownership that was not known to be associated with a lumber company. The Red River Lumber Company operations on the east side of the park are also difficult to reconstruct since there are no tax or company records to indicate the occurrence of logging and very little information is available re-

garding timber purchases by the state.

To determine if logging had occurred in these problem areas, comparisons were made between descriptions of the forest type prior to logging activity and present vegetation types. The elimination or reduction of Norway and white pine stands was the criterion used for determining whether or not logging had occurred. Pre-logging observations are necessary since the current absence of pines is not necessarily an indication of logging. Large portions of the pre-logging landscape contained burned "barrens", brush, or stands of aspen, birch, or northern hardwoods. Likewise, the presence of a pine stand does not necessarily imply that an area was not cut over since the current trees may have been below the minimum cutting diameter at the time of logging, fifty to seventy-five years ago. Also, trees may have been passed over because of defects from fire scars or limbiness.

Pre-logging descriptions are primarily obtained from two sources. Brower's timber survey, completed in 1900, provides a detailed estimate of all merchantable Norway and white pine in the original park and occasionally includes the condition and location of these pine stands. For the areas not included in Brower's survey, a more general description is available from the records of the General Land Survey conducted between 1875 and 1879. This survey laid out section lines and gave a description of the forest type as well as a listing of witness trees at the section and quarter section corners and around meandered lakes. A vegetation map based on

the survey descriptions has been prepared by Frissel (1971).

Vegetation maps of the park compiled by Meyer and Rommel (1953) and by Meyer (1966) as well as aerial photos taken in 1939, 1949, and 1966 were used to evaluate whether or not a reduction in the pre-logging Pine stands due to logging had occurred. When pre-logging locations of the pine stands were available, determining which tracts had been logged was relatively easy (figure 7). When only volume estimates of the timber were available, the lack of pine on a forty was sufficient evidence to indicate that logging had occurred. However, in several tracts in which the pine was very scattered or confined to stands of only a few acres, it was difficult to determine if logging had occurred. Without field checking it was not known if the pine present was sufficient to account for the amount of timber estimated in 1900, or if the tract had been cut over and the remaining pine was unmerchantable, due to size or defects, fifty-five to seventy-five years ago. The problems in correlating board-foot estimates with aerial coverage of a stand as represented on a vegetation map is illustrated in figure 8. The graph shows the wide range in the number of trees per acre which could make up 250 M feet ^{1/} of timber, depending on the tree diameter. Thus, 250 M feet could be represented by a few large diametered trees confined to a small area or numerous trees of smaller diameters covering the whole forty. This problem is further

^{1/}"M feet" indicates thousand board feet.

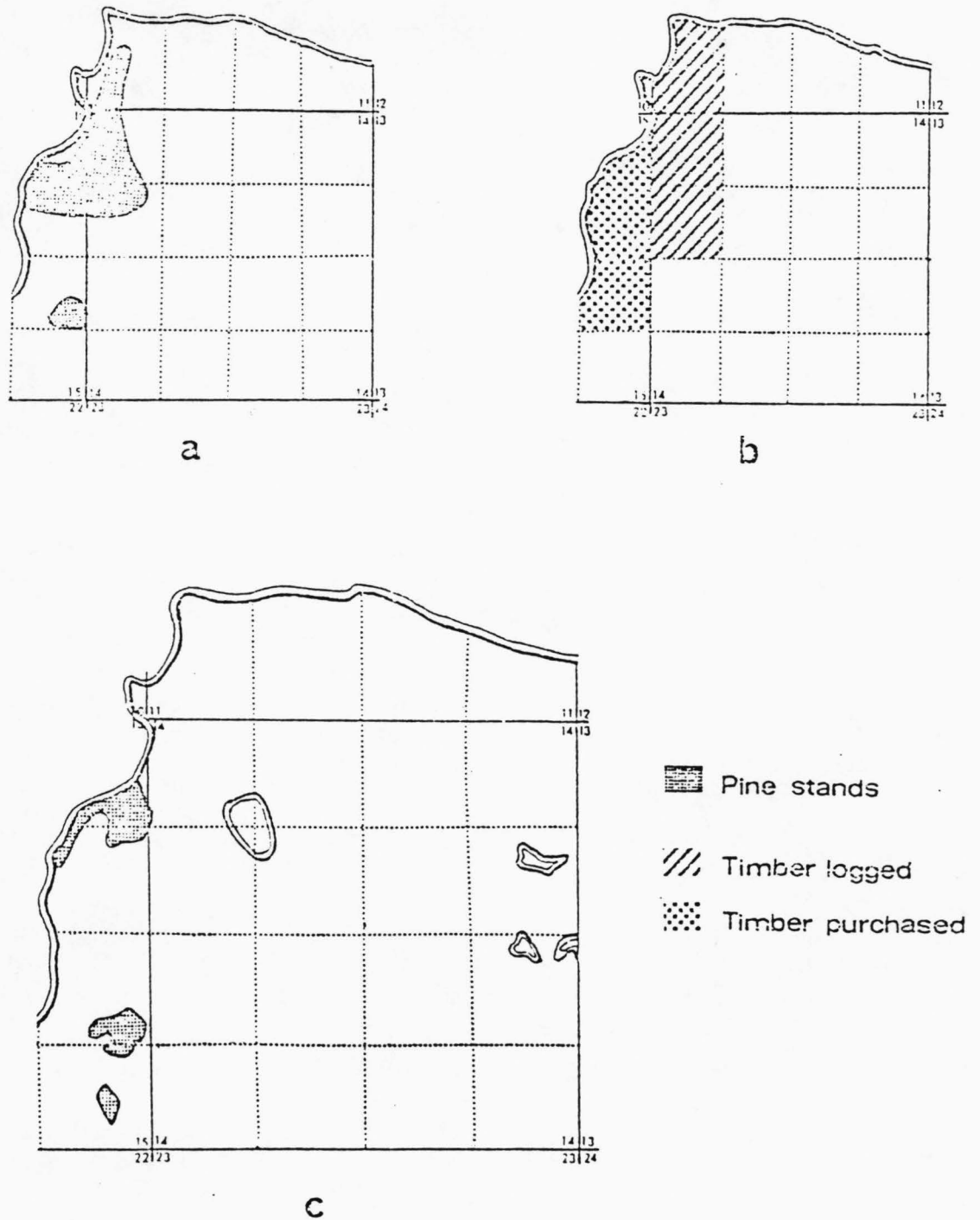


Figure 7. A comparison of pre-logging forest descriptions with the present forest cover in section 14 143-36. a) Location of pine stands based on Brower's (1900) timber survey. b) Shaded areas indicate land which was under the ownership of lumber companies. Diagonal striping indicates the area cut over as determined by comparisons with c), the present location of the pine stands (After Meyer, 1966).

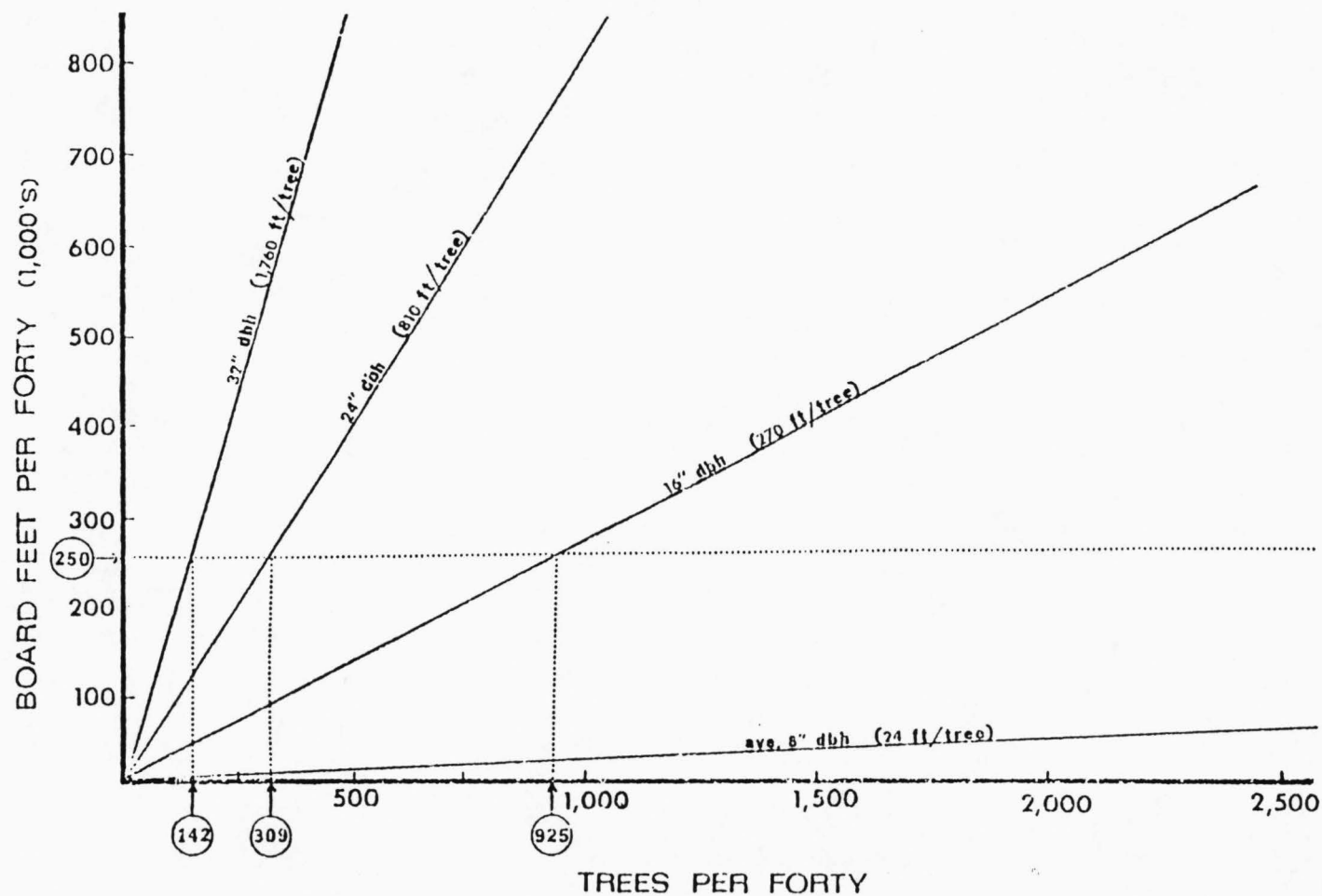


Figure 8. Graph showing the variability in the number of trees per acre of various tree diameters at breast height needed to account for 250 M board feet (Data from Woolsey, 1914).

complicated since factors other than logging, such as wind-throw, fire, disease, senescence, and salvage logging may have resulted in the elimination or reduction in acreage of some of the stands.

In areas where neither timber estimates nor location of pine stands was available, such as the west annex, evidence of logging could often be detected by noting abrupt changes in the vegetation type along the north-south and east-west boundary lines of a forty.

Despite the problems encountered in comparing pre- and post-logging forests, this method was useful for determining whether or not logging had occurred in many of the problem areas. In addition, this procedure was used to verify data previously obtained for other areas of the park.

F. Field Checking

Field checking for evidence of logging activity, such as cut stumps and road cuts, was of limited value in this study. Time limitations prevented extensive observations, although scattered spot checks were carried out on certain problem areas. Results from these areas were often inconclusive. Since salvage logging has occurred throughout the park since 1901, it is not possible to determine whether cut stumps are the result of early logging or of later salvage operations. Ground observations were most useful in areas which, because of tax records or General Land Survey descriptions, were thought to originally have had little, if any, pine. These were usually tracts under private ownership which were lo-

cated in swampy areas. The occurrence of cut stumps on these lands was used as evidence that they had been cut over.

The scarcity or abundance of cut stumps on a forty could be used as an indication of the original pine forests and thus, an indication of the degree of logging. This has been of value in some portions of the west annex where pre-logging timber estimates are not available. Time limitations prevented more than a general surveillance of much of these areas.

The locations of logging roads and camps were noted although no thorough attempt has been made to map them.

VI. RESULTS

From the various sources discussed, a comprehensive picture of the logging operations in Itasca State Park can be derived. The results for each lot and forty are listed in Appendix A. Table AI indicates which tracts were logged, the year or years logging occurred, and timber estimates when available. Cutting specifications and information on slash disposal can be determined from the lumber company that did the logging. The logging operations of the individual lumber companies are summarized in Appendix B.

The sources used to obtain the results are subject to error and occasionally conflict. As a result, errors and omissions have undoubtedly been made. To minimize this problem, the sources from which the data were obtained are referenced in the appendix. This makes possible future corrections as new or more accurate information is obtained. Information in Table AI that is enclosed in parentheses indicates results which are not based on any one specific source but are thought to be reasonable assumptions. A summary of the results is found in the following discussion.

A. Areas Logged

Information was available to make a determination as to whether or not commercial logging had occurred in each of the park's 763 lots and forties. A forty is defined as logged if, from evidence available, it appears that all merchantable timber was removed. Areas which were partially or selectively logged are also noted.

The extent of the logging is shown in figure 9 and summarized in the following table:

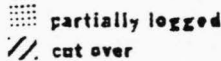


Figure 9. Area logged in Itasca State Park during the major logging operations from 1901 to 1919.

TABLE I.

Summary of Acreage Logged in Itasca State Park
During the Major Logging Operations
From 1901 to 1919.

	<u>Total Acreage</u>	<u>Acres Cut Over</u>		<u>Acres Partially Cut Over</u>	<u>Total Acreage Affected By Logging</u>
Original Park	19,904	2,449 (12%)		1,536 (8%)	3,985 (20%)
1901 and 1903 Additions	393	0 (0%)		0 (0%)	0 (0%)
West Annex	8,478	7,884 (93%)		0 (0%)	7,884 (93%)
North Annex	360	360 (100%)		0 (0%)	360 (100%)
East Annex	880	880 (100%)		0 (0%)	880 (100%)
Total	30,015	11,573 (39%)		1,536 (5%)	13,109 (44%)

The acreage figures are a rough approximation of the actual area cut since they are based on the General Land Survey of 1878. The acreage given also includes lakes and ponds that were not meandered, thereby giving a larger estimate of the area logged. The plat map (figure 9) indicating which forties were cut over is also based on the General Land Survey and would have been used by the lumber companies in locating which tracts to cut. Because of the problem in determining the location of the legal boundaries established in the original survey, it is difficult to precisely transfer the cut-over lots and forties to a topographic map.

B. Year Cut

Determining the year logging had occurred on each of the forties was much more difficult. Although much of the log-

ging can be pinned down to a single winter, often it was only possible to give a range of two or three years. In a few instances, the possible years of logging could not be determined.

C. Amount Cut

Timber estimates were given for many of the cut-over forties. However, the amount of timber logged was often grouped by sections or yearly totals, and this information is disclosed later under the logging seasons of the major lumber companies. Since the timber estimates came from various sources and were made in different years, they are not readily comparable. Growth, fires, windstorms, and other factors could have significantly affected the estimates within a few years. Even estimates made during the same period would vary with the timber cruiser's criteria of merchantable timber. The tree species and minimum log diameter cut varied from company to company as well as the assessment of soundness, taper, limbiness, fire scars, and dead and down timber. Different scales may also have been used, although the Scribner scale was standard (Green, 1901). As would be expected, the state's estimates were usually much lower than those of the lumber companies from whom they desired to purchase timber. Overall, it appears that the timber estimates should be used only as a rough approximation. For purposes of this study, the estimates were primarily of interest in distinguishing between areas which were severely affected by logging and those from which only a relatively small amount of timber was logged. For comparison purposes, timber estimates are in-

cluded for forties which were not logged.

Because of insufficient data, it is not possible to determine the total board-foot volume of logs taken from the park. However, from Brower's timber survey (1900), I calculated that 12 million board feet, or 29% of the total Norway and white pine, were logged from the "original park". The 12 million board-foot estimate probably greatly underestimates the actual cut.

D. Cutting Specifications

During the twenty years of logging in the park, there was a rapid change in the cutting specifications, with the trend being towards the greater utilization of inferior species and a reduction in the standards of size and quality of the logs. These cutting specifications also varied with the lumber companies. Detailed information on some of the lumber companies is given in appendix B.

Only Norway and white pine were reportedly cut during the early years of logging in the park area. Soon after, spruce (probably white spruce Picea glauca (Moench) Voss.), jack pine (Pinus banksiana Lamb.), and tamarack (Larix laricina (Du Roi) K. Koch.) were also included. Balsam fir (Abies balsamea (L.) Mill.) and white cedar (Thuja occidentalis L.) were occasionally scaled and may have been logged to a very limited extent. Norway and white pine comprised the bulk of the timber cut and ranged from 85% to 100% of the annual board-foot volume. The ratio of Norway to white pine in board feet averaged three to one (Immigration Land Company, 1910-1919).

Hardwoods were of no commercial value, but some were cut for camp use. ^{1/}

In 1900, many of the companies used a minimum log diameter of eight inches, measured inside the bark at the small end of the first twelve-foot log. Soon after the minimum diameter was reduced to six inches. A six-inch minimum was generally regarded as equivalent to a tree with an eight-inch diameter at breast height.

The standards for quality were also lowered during this period. Reports indicate that only the best Norway and white pine were cut at the turn of the century. In later years, with rising timber prices, it became more profitable to log the more fire-, insect-, and disease-damaged timber and the soundness requirements were lowered to permit twenty-five percent defect. Standards towards limbiness may also have been changed although no information was found regarding this.

Although the lumber companies had set policies toward the cutting specifications, other factors may have modified what was actually cut. In areas where pine was thinly scattered over a large area and where logs had to be hauled long distances, economic considerations may have resulted in only the best timber being cut. Also, since the hauling depended on the conditions of the iced roads, an early thaw could put a

^{1/} In the early 1960's a limited amount of salvage logging from the bottom of Long Lake was done by scuba divers. The logs were mostly oak, probably cut for camp use as sledrunners. The high density oak logs were considered "sinkers" in the log ponds (personal communication, H. L. Hansen).

sudden halt to all logging operations for the year. In areas of scattered pine, this would probably make it unprofitable to go back another year to cut the remaining timber.

E. Slash Disposal

The policies toward slash disposal in the park varied over the years. Prior to 1909, the burning of slash, if carried out at all, was done in the late spring or early summer. However, the nearly statewide destruction of green timber and forest reproduction, or the accumulation of fuel for later disastrous forest fires, prompted action by the legislature. In the spring of 1909, a law went into effect requiring all lumber companies to pile and burn their slash by May 1 and that "care ... shall be exercised to prevent injury to remaining standing timber or woods" (Forestry Commissioner, 1909). By 1913, further legislation specified procedures for disposing of the various forest types throughout the state (State Forestry Board, 1913).

In the logging of pine forests, it was required that slash be piled and burned as cutting progressed in winter. Exceptions to this were allowed in areas where the pine was widely scattered or where the land was completely surrounded by swamps.

Initially, laws were not always strictly followed. However, the State Forestry Board usually kept a close watch on the logging operations in the park and did the burning themselves when the lumber companies failed to do so.

Slash disposal policies of the major lumber companies

operating in the park are discussed in appendix B.

F. Road Construction

Logging operations resulted in a network of logging roads throughout much of the park. The logging roads followed the lowlands and drainage ways and usually made use of frozen marshes, swamps, bogs, and small lakes. Evidence of these roads can be seen on aerial photos and in the field.

Logging roads were allowed to cross state-owned land to reach Lake Itasca. During the first two years of logging Brower (1904) reported that:

Lumbering and logging roads have recently been indiscriminately slashed through and across park lands, disfiguring their beauty, and opening the way to all the dangers of forest conflagrations against many magnificent evergreen groves and promiscuous forest which were numbered among the valuable park holdings the state possessed.

As a result of this activity, legislation in April of 1903 required lumber companies to obtain licenses to haul their logs across state land and to land them in Lake Itasca (Brower, 1904). Park officials tried to limit road construction cutting to tamarack, small or overmature pines or hardwoods.

G. Flooding

A logging dam was constructed at the outlet of Lake Itasca in 1902 (Brower, 1904; Dobie, 1959). It was used to raise the water level for driving logs down the Mississippi River. At least eight drives originated in Lake Itasca beginning with the spring of 1902 (Anderson, 1937). An agreement in September of 1903 stipulated that the lake level was never to be raised "to a point where the water will do damage

to the park property". It also required the driving of the logs "at a date not later than fifteen days from and after the melting and passing out of ice from Itasca Lake" (Brower, 1904). This agreement, however, was not always carried out as illustrated in the following quote from a letter written by Brower on April 20, 1904:

The water in Lake Itasca is now about three feet above normal stage, one foot higher than last spring at the time they commenced driving logs out of the lake, and the water is still rising. All swamps west of the lake are from twelve to eighteen inches under water.

A few weeks later Brower also commented that:

... damage by backwater floods over the entire area of Itasca and Elk Lakes is slowly and surely creating an extreme shore-line destruction of park trees, evergreens and forest ...

The sluicing of ten million feet of logs required the re-flooding of the lake several times, with each reflooding creating additional damage to the park. Brower reported that a great amount of time and money would be required to "plant and raise another shore-line abundance of trees along Itasca Lake to take the place of those killed by flooding in 1903, and obliterated by the same process in 1904" (Brower, 1904).

There are few accounts of the remaining log drives. Between 1916 and 1919, the Pine Tree Lumber Company conducted four drives on the Mississippi River. It had agreed to raise the lake level by no more than two feet. The final log drive was conducted in 1921.

VII. SUMMARY

The early logging operations of Itasca State Park represent one of the most significant disturbances that has influenced the character of the park's forest. The purpose of this study was to describe and quantify the logging disturbance in order to provide a background for ecological studies in the park. A reconstruction of the park's logging history was obtained by examining records of deeds, eyewitness accounts, county tax records, company records, pre-logging descriptions, and evidence of logging present in the field. These sources provided detailed information concerning the eighteen years of logging in the park, from 1901 to 1919, in which at least eight lumber companies were involved in the cutting or partial cutting of forty-four percent (13,109 acres) of the park area. Specifically, from the information available it was possible to determine which of the 763 lots and forties had been logged. For most of the tracts the occurrence of logging could be narrowed down to one to three winters. Cutting specifications were obtained for the major lumber companies. These varied as to species cut as well as the minimum log diameter. An estimate of the amount of board feet cut was obtained for many of the tracts. Also, the various methods of slash disposal and the time of year in which they were carried out are included.

REFERENCES CITED

- Anderson, R. 1937. Historical Narrative - Itasca State Park, Minnesota. National Park Service. Unpublished. 67 p.
- Anfang, R. A. 1972. Feeding habits of porcupine (Erethizon dorsatum L.) in Itasca State Park, Minnesota. Unpubl. Rep. College For. Univ. Minnesota. St. Paul, Minn. 47 p.
- Ayres, H. B. 1899. Pine region of Minnesota (a map). U.S. Geological Survey Twenty-first Annual Report. Part V Pl. CXLIII.
- Brower, J. V. 1898. Prehistoric man at the headwaters of the Mississippi River. Minn. Hist. Coll., Vol. VIII, pp. 232-269.
- Brower, J. V. 1900. Itasca State Park timber examinations. Unpublished. 265 p.
- Brower, J. V. 1904. Itasca State Park, an illustrated history. Minn. Hist. Soc. Coll., Vol. XI. Minn. Hist. Soc., St. Paul, Minn. 285 p.
- Dobie, J. 1959. The Itasca story. Ross and Haines, Minneapolis, Minn. 202 p.
- Forestry Commissioner. 1909. Fifteenth annual report. Pioneer Company, St. Paul, Minn. 154 p.
- Frissell, S. S. 1971. An analysis of the maintenance of pre-settlement biotic communities as an objective of management in Itasca State Park, Minnesota. Ph.D. Thesis. Univ. Minnesota. 228 p.
- Green, S. B. 1902. Forestry in Minnesota. Pioneer Press Company, St. Paul, Minn. 401 p.
- Hansen, H. L., V. Kurmis, and D. D. Ness. 1974. The ecology of upland forest communities and implications for management in Itasca State Park, Minnesota. Univ. Minnesota Agric. Exp. Sta. Techn. Bull. 298. 43 p.
- Immigration Land Company. 1910-1919. Company papers. Minn. Hist. Soc., St. Paul, Minn.
- Janssen, C. R. 1967. Stevens Pond: a postglacial pollen diagram from a small Typha swamp in northwestern Minnesota, interpreted from the pollen indicators of surface samples. Ecol. Monogr. 37:145-172.
- Larson, A. M. 1949. The history of the white pine industry in Minnesota. Univ. Minn. Press. Minneapolis, Minn. 432 p.

- Lundgren, A. L. 1954. An investigation of the 1953 blowdown in Itasca State Park. Unpubl. Rep. School For. Univ. Minnesota. 47 p.
- Marschner, F. J. 1930. The original vegetation of Minnesota. (a map). Published 1964 by Soil Conserv. Service., U.S. Dept. Agric. St. Paul, Minn.
- McAndrews, J. H. 1966. Post-glacial history of prairie, savanna, and forest in northwestern Minnesota. Mem. Torrey Bot. Cl. 22(2), 72 p.
- Meyer, M. P. 1966. The vegetation of Itasca State Park. (a map). School For. Univ. Minnesota. St. Paul, Minn.
- Meyer, M. P. and S. Rommel. 1953. Itasca State Park. (a map). School For. Univ. Minnesota. St. Paul, Minn.
- Minnesota Forestry Board. 1913. Third Annual Report of the state forester. 147 p.
- Ross, A. B., J. R. Bray, and W. H. Marshall. 1970. Effects of long-term deer exclusion on a Pinus resinosa forest in north-central Minnesota. Ecology 51:1088-1093.
- Ruggles, A. G. 1910. The larch sawfly in Minnesota. Canad. Ent. 42:93-94.
- Ruggles, A. G. 1911. The larch sawfly (Lyaeonematus erichsonni, Hartz) in Minnesota. Journ. Econ. Ent. 4:171-172.
- Sargeant, A. B. and W. H. Marshall. 1959. Mammals of Itasca State Park. Univ. Minn. Agric. Exp. Sta. Pap. 4296. 12 p.
- Shay, C. T. 1971. The Itasca bison kill site, an ecological analysis. Minn. Hist. Soc. 133 p.
- Vandersluis, C. W. 1963. A brief history of Beltrami County. Beltrami County Hist. Soc., Bemidji, Minn. 40 p.
- Woolsey, T. S. Jr. and H. H. Chapman. 1914. Norway pine in the lake states. U.S. Dept. Agr. Bull. 139. 42 p.
- Wright, H. E. Jr. and R. V. Ruhe. 1965. Glaciation of Minnesota and Iowa. p. 29-41. The Quaternary of the United States (H. E. Wright, Jr. and D. G. Frey, eds.) Princeton Univ. Press. Princeton, N.J. 922 p.

APPENDIX A

List of Figures

<u>Figure</u>		<u>Page</u>
A1	Plat map of Itasca State Park.	A-5

List of Tables

<u>Table</u>		<u>Page</u>
AI	Summary of Logging Information by Legal Description.	A-7

Explanation of Summary of Logging Information

Acres - Based on the plat map made from the General Land Survey in 1878.

Owner - Indicates company or individual(s) who owned the tract when logging would have occurred.

	<u>Major Timber Owners</u>	<u>Private Owners</u>	<u>Other</u>
B&H	Bonness & Howe	AS A. Stephens	GNRC Great Northern Rwy. Co.
B&S	Beebe & Stone	BW B. Webster	
CFR	C. F. Ruggles	EH E. Hogenson	LFDR Little Falls & Dakota Rwy. Co.
CLS	C. L. Smith	EW E. Wahl	NPRC Northern Pacific Rwy. Co.
JSP	J. S. Pillsbury	FC F. Carson	
PRLC	Park Rapids Lbr. Co.	FH F. Hall	PR Park Region
		GB G. Breitbach	SL School Land
PTMC	Pine Tree Lbr. Co.	GC G. Cook	SSS State Swamp Selection
RRLC	Red River Lbr. Co.	GH G. Heinzelman	US United States
		HS H. Stephens	
SCC	Shevlin - Carpenter Co.	IL I. Long	
TBW	T. B. Walker	JK J. Korth	
W&A	Walker & Akeley	K Kirsch	
WJW	W. J. Walker	LC L. Cummings	
		MH M. Heinzelman	
		MM M. Magnussen	
		NJ N. Johnson	
		NR N. Rust	
		S Shutte	
		TW T. Wegman	
		WM W. McMullen	

Cut - x - Indicates cut over

xp - Indicates partially cut over

--- - Indicates not commercially logged

Logged By - Indicates the lumber company that did the logging, or in cases where it is not known, the individual who obtained the timber rights.

	<u>Lumber Company</u>	<u>Owner Of Timber Deeds</u>
BLC	Brainerd Lbr. Co.	JR J. Richards
CLC	Crookston Lbr. Co.	LZS L. Z. Smith
FB&C	F. W. Bonness & Co.	TS T. Shevlin
GFLC	Grand Forks Lbr. Co.	
HALC	H. C. Akeley Lbr. Co.	
NCLC	Nichols & Chisholm Lbr. Co.	
PTLC	Pine Tree Lbr. Co.	
RRLC	Red River Lbr. Co.	

Year(s) - Indicates the winter or range of winters in which logging would have occurred.

Source - Indicates the source which was the basis for determining whether a tract was cut, and if so, the year logging would have occurred. The sources are listed beginning on page A-22.

Timber
Estimates - Given in thousands of board feet.

NP - Norway or red pine

WP - White pine

JP - Jack pine

SP - Spruce (probably white spruce)

TM - Tamarack

Timber
Estimates (continued)

Note: In certain cases, the timber estimates were grouped together. The symbols * and # are used to indicate tracts that are included together in the grouped timber estimates.

C - Indicates the cruiser(s) who estimated the timber.

<u>Cruiser</u>	<u>Year</u>	<u>Species Included In Timber Survey</u>	<u>Employer</u>
B Brower & Finney	1900	NP, WP	State
D Division of Forestry	1920's	NP, WP, JP	State
F T. Fitzgerald	1901-02	NP, WP, JP	State
J L. F. Johnson	1913	NP, WP, JP, SP	PTLC
K Keegan & Walker	1900	NP, WP, D & D ^{1/}	RRLC
P Peterson	1913	NP, WP, JP, SP, TM	State
S State Forestry Board		NP, WP, JP	State
T Tierney	1916	NP, WP, JP, SP, TM	State
W PTLC	1910-18	NP, WP, JP, SP, TM	PTLC

^{1/} Indicates dead and down timber.

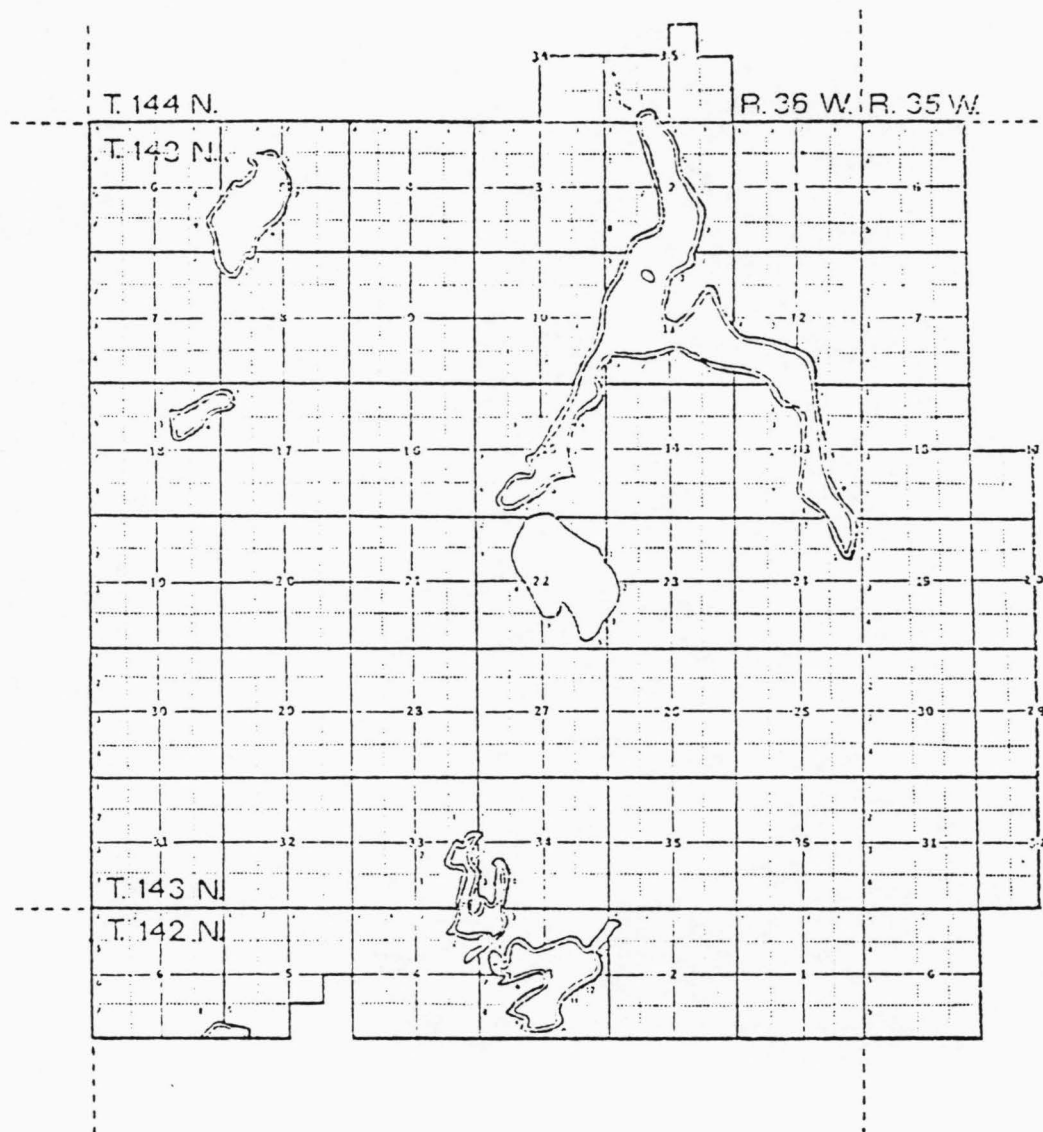


Figure A1. Plat map of Itasca State Park.

Index to Summary of Logging Information

<u>TWP</u>	<u>Section</u>	<u>Page</u>
142-35	6	A-6
143-35	6, 7, 17, 18	A-6
	19, 20, 29, 30	A-7
	31, 32	A-8
142-36	1	A-8
	2, 3, 4, 5	A-9
	6	A-10
143-36	1, 2, 3	A-10
	4, 5, 6, 7	A-11
	8, 9, 10	A-12
	11, 12, 13	A-13
	14, 15, 16, 17, 18	A-14
	19, 20	A-15
	21, 22, 23, 23	A-16
	25, 26, 27	A-17
	28, 29, 30, 31	A-18
	32, 33, 34	A-19
	35, 36	A-20
144-36	34, 35	A-20

Table AI. Summary of Logging Information by Legal Description 1/ A-7

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M B)					
							SP	WP	SW	SE	TM	TOTAL C
TWP 142-35												
Section 6												
#1	34.57	US	---			3	0*	0*				0* B
#2	51.87	W&A	X	(H&LC)	(1901-02)	(13),48	35	0				35 B
SW/NE	40.00	US	---			3	*	*				* B
SE/NE	40.00	SCC	---			57	30	15*				45 B
							71	6				77 P
#3	20.00	TEW	X	(H&LC)	1901-02	13,48	80	0				80 B
#4	46.60	TEW	X	(H&LC)	1901-02	13,48	75	0				75 B
#5	53.05	W&A	X	(H&LC)	1901-02	13,48	55	0				55 B
#6	53.15	W&A	X	(H&LC)	1901-02	13,48	40	0				40 B
NE/SE	40.00	W&A	X	(H&LC)	1901-02	13,48	25	20				45 B
NW/SE	40.00	US	---			3	*	*				*
SW/SE	40.00	US	---			3	*	*				*
SE/SE	40.00	W&A	X	(H&LC)	1901-02	13,48	20	5				25 B
TWP 143-35												
Section 6												
#1	42.67	SSS	---			1	5	0				5 B
#2	41.61	CLS	X	GFLC	1902-03	21	110	25				135 B
SW/NE	40.00	JSP	X	BLC	1901-02 & 1902-03	22	165	15				320 F
SE/NE	40.00	SSS	---			1	20	0				20 B
#3	43.70	JSP	X	BLC	1901-02	22	150	225				375 B
#4	43.37	SW	X	TS	1901-02	15	90	40				130 B
#5	43.62	W&A	---			37	70	0				70 B
#6	43.87	US	---			3	125	60	20			155 B
							28	0				28 B
NE/SE	40.00	CFR	X	?	(1910-11)	50	80	2				82 B
NW/SE	40.00	W&A	---			49,55	10	0				10 B
SW/SE	40.00	US	---			3	46	10	5	12		73 P
SE/SE	40.00	CFR	X	?	(1910-11)	50	6	0				6 B
							40	0				40 B
Section 7												
NE/NE	40.00	W&A	X	RRLC		41,46,48	18	3				21 B
NW/NE	40.00	W&A	---			49	40	3				43 B
							7	7	3			17 P
SW/NE	40.00	CFR	X	?	1910-11	50,59	140	5				145 B
SE/NE	40.00	W&A	X	RRLC	1911-14	41,46,48	34	6				40 B
#1	44.30	W&A	---			49	26	7				33 B
#2	44.30	TEW	---			49	89	53	18			160 P
#3	45.50	CLS	X	GFLC	1902-03	6,20	78	36				114 F
#4	46.10	TEW	X	RRLC	1911-14	41,46,48	130	18				148 B
							100	22				122 B
NE/SE	40.00	CFR	X	?	1910-11	59	127	13				140 B
NW/SE	40.00	W&A	---			49	65	5				70 B
SW/SE	40.00	W&A	---			49	75	38				113 P
							55	20				75 B
SE/SE	40.00	W&A	X	RRLC	1911-14	41,46,48	7	15				22 P
							70	3				73 B
Section 17												
SW 1/4	160.00	P&S	X	RRLC	1913-14	56,74,ap						
Section 18												
NE/NE	40.00	US	---			3	5	0				5 B
NW/NE	40.00	W&A	X	RRLC	1911-14	41,46,48	114	15				129 B
SW/NE	40.00	P&S	X	RRLC	1911-14	41,46,48	6	0				6 B
SE/NE	40.00	US	---			3	0	0				0 B

1/See page A-2 in appendix A for explanation of terms.

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M ft.)					
							SP	MP	SI	SE	SH	TOTAL
TWP 143-35												
Section 18 (continued)												
#1	46.80	B&S	X	RRLC	1911-14	41,46,48	175	80				255
#2	47.60	B&S	X	RRLC	1911-14	41,46,48	100	22				122
#3	48.40	US	---			3	30	0				30
#4	49.20	JSP	Xp	FBAC	1901-02	11	64	8				72
NE/SE	40.00	US	---			3	0	0				0
NW/SE	40.00	US	---			3	8	0				8
SW/SE	40.00	US	---			3	20	0				20
SE/SE	40.00	US	---			3	6	0				6
Section 19												
NE/NE	40.00	B&S	---			37	143	3				146
NW/NE	40.00	US	---			3	415	30	35			480
SW/NE	40.00	US	---			3	21	0				21
SE/NE	40.00	B&S	---			49	30	2				32
							54	3				57
							100	23	9			141
#1	49.35	AM	X	FB&C	1901-02	10,11	53	9				62
#2	48.85	B&S	---			37	143	10				153
#3	48.35	SCC	---			38	250	60	5			315
#4	47.35	B&S	---			37	30	0				30
							40	5				45
							50	2				52
NE/SE	40.00	TEW	---			49	260	10	20	10		300
NW/SE	40.00	B&S	---			49	65	25				90
SW/SE	40.00	B&S	---			49	195	105	10			210
							36	10				46
SE/SE	40.00	US	---			3	182	30	15			227
							90	0				90
							180	30	25			235
							10	0				10
Section 20												
NE/NW	40.00	SCC	X	RRLC	(1911-14)	74,ap						
NW/NW	40.00	SCC	---			38						
SW/NW	40.00	SCC	---			38	625	50	5			680
SE/NW	40.00	SCC	X	RRLC	(1911-14)	74,ap	525	105				630
NE/SW	40.00	SCC	X	RRLC	(1911-14)	74,ap						
NW/SW	40.00	B&S	---			37	350	60				420
SW/SW	40.00	B&S	---			49,54	5	7				12
SE/SW	40.00	SCC	X	RRLC	(1911-14)	74,ap						
Section 29												
NE/NW	40.00	W&A	X	RRLC	(1911-14)	74,ap						
NW/NW	40.00	IL	---			40						
SW/NW	40.00	W&A	---			49						
SE/NW	40.00	W&A	X	RRLC	(1911-14)	74,ap	60	5				65
NE/SW	40.00	B&S	X	RRLC	(1911-14)	56,74,ap						
NW/SW	40.00	TEW	X	RRLC	(1911-14)	74,ap						
SW/SW	40.00	B&S	X	RRLC	(1911-14)	74,ap						
SE/SW	40.00	B&S	X	RRLC	(1911-14)	56,74,ap						
Section 30												
NE/NE	40.00	B&S	---			49,54	60	40				100
NW/NE	40.00	SCC	---			49	161	5	6			172
							75	20				95
SW/NE	40.00	SCC	---			49	260	80				340
							80	5				85
SE/NE	40.00	B&S	---			49,54	195	65				260
							80	10				90
							182	15	22			229

LOCAL				LOGGED				TIMBER ESTIMATE (M B)					
DESCRIPTION	ACRES	OWNER	CUT	BY	YEAR(S)	SOURCE	SP	WP	LP	BP	CP	TOTAL	C
TWP 143-35													
Section 30 (continued)													
#1	47.90	B&S	---			37	140	40				180	B
							350	45			10	405	T
#2	48.50	B&S	---			37	50	5				55	B
							110	90			120	210	T
W ¹ / ₂ /#3	24.55	SCC	---			38	100*	80*				180*	B
							130	50			10	190	T
E ¹ / ₂ /#3	24.55	SCC	---			49	*	*				*	B
							50	18				68	P
W ¹ / ₂ /#4	24.85	SCC	---			38	80*	65*				145*	B
							110	15				125	T
E ¹ / ₂ /#4	24.85	SCC	---			49	#	#				#	B
							78	16				94	P
NE/SE	40.00	W&A	---			49	80	15				95	B
							31	25				66	P
NW/SE	40.00	W&A	---			49	100	20				120	B
							87	45			20	152	P
SW/SE	40.00	W&A	---			49	40	0				40	B
							85	40				125	P
SE/SE	40.00	W&A	---			49	20	10				30	B
							15	24			2	42	P

Section 31

NE/NE	40.00	S	X	HALC	1901-02	7,12	300	35					335	B
NW/NE	40.00	US	---			3	80	0					80	B
SW/NE	40.00	TDW	---			48,ap	75	0					75	B
SE/NE	40.00	S	X	HALC	1901-02	7,12	120	20					140	B
#1	50.35	PTMC	Xp	PTLC	1912-13	43,44	300	70					370	B
#2	51.05	PTMC	Xp	PTLC	1912-13	43,44	240	70					310	B
#3	51.75	PTMC	X	PTLC	1912-13	43	160	20					180	B
#4	50.70	PTMC	X	PTLC	1912-13	43	175	15					190	B
NE/SE	40.00	PTMC	X	PTLC	1912-13	43	100	0					100	B
NW/SE	40.00	PTMC	X	PTLC	1912-13	43	25	0					25	B
SW/SE	40.00	PTMC	X	PTLC	1912-13	43	0	0					0	B
SE/SE	40.00	PTMC	X	PTLC	1912-13	43	20	0					20	B

Section 32

NW $\frac{1}{2}$	160.00	CFR	X	?	?	74,ap								
NE/SW	40.00	?	X	(RRLC)	(1911-14)	74,ap								
W $\frac{1}{2}$ /SW	80.00	SSC	X	RRLC	(1911-14)	74,ap								
SE/SW	40.00	?	X	(RRLC)	(1911-14)	74,ap								

TWP 142-36

Section 1

#1	40.00	PTMC	X	PTLC	1912-13	43	35	0					35	B
#2	40.00	PTMC	X	PTLC	1912-13	43	190	60					250	B
SW/NE	40.00	PTMC	X	PTLC	1912-13	43	50	0					50	B
SE/NE	40.00	PTMC	X	PTLC	1912-13	43	30	0					30	B
#3	40.00	PTMC	X	PTLC	1912-13	43	25	8					33	B
#4	40.00	NPRC	---			4	100*	0*					100*	B
S $\frac{1}{2}$ /NW	80.00	NPRC	---			4	*	*					*	
NE/SW	40.00	NPRC	---			4	*	*					*	
NW/SW	40.00	PTMC	---			44	25	0					25	B
							105	5					110	W
S $\frac{1}{2}$ /SW	80.00	NPRC	---			4	*	*					*	
NE/SE	40.00	NPRC	---			4	*	*					*	
SW/SE	40.00	PTMC	X			43	90	0					90	B
SW/SE	40.00	PTMC	Xp	PTLC	1912-13	43,44	75	0					75	B
							355	10			10		375	W
SE/SE	40.00	PTMC	X	PTLC	1912-13	43	60	0					60	B

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED		SOURCE	TIMBER ESTIMATES (M. B.)					
				BY	YEAR(S)		NP	WP	JP	SP	TM	TOTAL C
TWP 142-36												
Section 2												
#1	40.25	US	---			3	100*	0*				100* B
#2	40.75	US	---			3	*	*				*
SE/NE	80.00	US	---			3	*	*				*
#3	41.25	US	---			3	*	*				*
#4	38.25	US	---			3	*	*				*
SE/NW	80.00	US	---			3	*	*				*
SE/SE	160.00	US	---			3	*	*				*
SE/SE	160.00	US	---			3	*	*				*
Section 3												
#1	35.75	NPRC	---			4	60*	0*				60 B
#2	39.65	PTMC	---			44	25	0				25 B
							15	10				25 J
#13	13.10	NPRC	---			4	*	*				*
#3	45.15	PTMC	---			44,45	70	40				110 B
							98	60				178 P
#4	18.90	NPRC	---			4	*	*				*
#5	5.00	NPRC	---			4	*	*				*
#6	21.90	NPRC	---			4	*	*				*
#7	36.25	NPRC	---			4	*	*				*
#8	39.00	NPRC	---			4	*	*				*
#9	15.25	PTMC	---			45	25	0				25 B
							60	0	22			68 P
#12	34.90	NPRC	---			4	*	*				*
#11	9.50	NPRC	---			4	*	*				*
#10	29.00	PTMC	---			45	30	0				30 B
							12	0				12 P
SE/SE	40.00	NPRC	---			4	*	*				*
Section 4												
#1	.35	US	---			3	150*	0*				150* B
#3	44.05	US	---			3	*	*				*
SE/NE	40.00	US	---			3	*	*				*
#2	42.50	US	---			3	*	*				*
#4	38.75	US	---			3	*	*				*
#5	38.25	US	---			3	*	*				*
SE/NW	80.00	US	---			3	*	*				*
SW/SE	160.00	US	---			3	*	*				*
SE/SE	160.00	US	---			3	*	*				*
Section 5												
#1	38.45	PTMC	X	PTLC	1913-14	51,tx						
#2	39.25	CB	X	PTLC	1913-14	47,51,tx						
SW/NE	40.00	PTMC	X	PTLC	1913-14	51,tx						
SE/NE	40.00	PTMC	X	PTLC	1913-14	51,tx						
#3	40.25	CB	X	PTLC	1913-14	47,51,tx						
#4	41.15	PTMC	X	PTLC	1913-14	51,tx						
SW/NW	40.00	K	X	PTLC	1913-14	51,tx						
SE/NW	40.00	PTMC	X	PTLC	1913-14	51,tx						
NE/SW	40.00	PTMC	X	PTLC	1913-14	51,tx						
NW/SW	40.00	PTMC	X	PTLC	1913-14	51,tx						
#5	28.20	PTMC	X	PTLC	1913-14	51,tx						
SE/SW	40.00	PTMC	X	PTLC	1913-14	51,tx						
NW/SE	40.00	PTMC	X	PTLC	1913-14	51,tx						

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M ft.)					
							NP	WP	JP	SP	TI	TOTAL C
TWP 142-36												
Section 6												
#1	41.40	EH	X	PTLC	1914-15	53	150	0			150	W
#2	41.00	PTMC	X	PTLC	1914-15	tx						
SW/NE	40.00	PTMC	X	PTLC	1914-15	tx						
SE/NE	40.00	PTMC	X	PTLC	1914-15	tx						
#3	40.00	PTMC	X	PTLC	1914-15	tx						
#4	40.50	(US) (---)				ap						
#5	40.25	(PTLC) (---)				73, ap						
SE/NW	40.00	JSP	X	ELC	1904-06	tx						
NE/SW	40.00	JSP	X	ELC	1904-06	tx						
#6	40.19	(US) (---)				ap						
#7	40.16	JSP	X	ELC	1904-06	tx						
SE/SW	40.00	JSP	X	ELC	1904-06	tx						
NE/SE	40.00	PTMC	X	PTLC	1913-15	tx						
NW/SE	40.00	PTMC	X	PTLC	1913-15	tx						
SW/SE	40.00	PTMC	X	PTLC	1913-15	tx						
#8	39.40	PTMC	X	PTLC	1913-15	tx						
TWP 143-36												
Section 1												
#1	40.00	W&A	---			49	95	100			195	B
#2	40.00	W&A	---			49	100	15			115	P
SW/NE	40.00	W&A	---			49	20	225			245	B
SE/NE	40.00	W&A	---			49	4	50			55	P
							60	100			160	B
							118	80			198	P
							90	30			120	B
							25	95			120	P
#3	40.00	US	---			3	0*	300*			300*	B
#4	40.00	US	---			3	*	*			*	
S $\frac{1}{2}$ /NW	80.00	US	---			3	*	*			*	
SW $\frac{1}{4}$	160.00	US	---			3	30	0			30	B
SE $\frac{1}{4}$	160.00	US	---			3	30	20			50	B
Section 2												
#1	40.15	WM	---			8	150*	100*			250*	B
#2	36.30	WM	---			8	*	*			*	
	3.30	NR	---			16						
#5	21.75	US	---			3	50*	0*			50*	B
SE/NE	40.00	WM	---			8	*	*			*	
#3	43.50	US	---			3	#	#			#	
#4	55.65	US	---			3	#	#			#	
#7	29.60	US	---			3	#	#			#	
NW/SW	40.00	US	---			3	#	#			#	
#8	31.60	US	---			3	#	#			#	
#6	42.60	WM	---			8	*	*			*	
#9	42.65	US	---			3	#	#			#	
Section 3												
#1	41.17	US	---			3	300*	100*			400*	B
#2	41.12	US	---			3	*	*			*	
S $\frac{1}{2}$ /NE	80.00	US	---			3	*	*			*	
#3	41.07	US	---			3	*	*			*	
#4	41.02	US	---			3	*	*			*	
S $\frac{1}{2}$ /NW	80.00	US	---			3	*	*			*	
SW $\frac{1}{4}$	160.00	US	---			3	*	*			*	

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M. ft.)					
							MP	WP	JP	SP	TM	TOTAL C
TWP 143-36												
Section 3 (continued)												
NE/SE	40.00	LFDR	---			5	*	*				*
W $\frac{1}{2}$ /SE	80.00	US	---			3	*	*				*
SE/SE	40.00	LFDR	---			5	*	*				*
Section 4												
#1	41.00	US	---			3	300*	0*				300* B
#2	41.00	JSP	X	BLC	1903-04	29, tx	90	5				95 B
S $\frac{1}{4}$ /NE	80.00	US	---			3	*	*				*
#3	41.00	JSP	X	BLC	1903-04	29, tx	170	0				170 B
#4	41.00	JSP	X	BLC	1902-03	25, 29	200	0				200 B
SW/NW	40.00	JSP	X	BLC	1902-03	25, 29	250	15				265 B
SE/NW	40.00	JSP	X	BLC	1902-03 & 1903-04	25, 29, tx	145	0				145 B
NE/SW	40.00	JSP	X	BLC	1902-03 & 1903-04	25, 29, tx	90	0				90 B
NW/SW	40.00	JSP	X	BLC	1902-03	25, 29	125	0				125 B
S $\frac{1}{4}$ /SW	40.00	US	---			3, 23	*	*				*
SE $\frac{1}{2}$	160.00	US	---			3	*	*				*
Section 5												
#1	40.90	PTMC	X	PTLC	1915-17	61						
#2	40.70	PTMC	X	PTLC	1915-17	61						
#6	42.05	PTMC	X	PTLC	1915-17	61						
SE/NE	40.00	JSP	X	BLC	1902-04 (1902-03)	tx						
#3	36.80	PTMC	X	PTLC	1915-17	61						
#4	40.05	PTMC	X	PTLC	1915-17	61						
#5	30.95	PTMC	X	PTLC	1915-17	61						
#8	28.25	PTMC	X	PTLC	1915-17	61						
NE/SE	40.00	PTMC	X	PTLC	1915-17	61						
#7	41.75	PTMC	X	PTLC	1915-17	61						
SW/SE	40.00	PTMC	X	PTLC	1915-17	61						
SE/SE	40.00	PTMC	X	PTLC	1915-17	61						
Section 6												
#1	40.17	LC	(X)	?		fc						
#2	40.12	LC	(X)	?		fc						
SW/NE	40.00	RRLC	X	RRLC	1905-07	35						
SE/NE	40.00	W&A	X	RRLC	1905-07	35						
#3	40.07	LC	(X)	?		fc						
#4	37.18	LC	(X)	?		fc						
#5	37.12	MH	X	JR	1908-13	39						
SE/NW	40.00	MH	X	JR	1908-13	39						
NE/SW	40.00	MH	X	JR	1908-13	39						
#6	37.07	MH	X	JR	1908-13	39						
#7	37.02	EH	---			72	115	39	8			162 D
SE/SW	40.00	EH	---			72	43	10	2			55 D
#8	35.75	W&A	X	RRLC	1905-07	35						
NW/SE	40.00	RRLC	X	RRLC	1905-07	35						
SW/SE	40.00	RRLC	X	RRLC	1905-07	35						
#9	31.50	NJ	X	PTLC	1916-17	62						
Section 7												
#5	37.85	PTMC	X	PTLC	1915-17	64						
W $\frac{1}{2}$ /NE	80.00	PTMC	X	PTLC	1915-17	64						
SE/NW	40.00	PTMC	X	PTLC	1915-17	64						
NE/NW	40.00	PTMC	X	PTLC	1915-17	64						
#1	36.87	PTMC	X	PTLC	1915-17	64						
#2	36.62	PTMC	X	PTLC	1915-17	64						
NE/NW	40.00	PTMC	X	PTLC	1915-17	64						

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (in ft.)					
							NP	MP	JP	SP	TM	TOTAL
TWP 143-36												
Section 7 (continued)												
NE/SW	40.00	PTMC	X	PTLC	1915-17	64						
#3	36.37	PTMC	X	PTLC	1915-17	64						
#4	36.12	PTMC	X	PTLC	1915-17	64						
SE/SW	40.00	PTMC	X	PTLC	1915-17	64						
SE 1/4	160.00	PTMC	X	PTLC	1915-17	64						
Section 8												
NE/NE	40.00	JSP	X	BLC	1902-04	tx						
NW/NE	40.00	W&A	X	RRLC	1905-07	35, tx						
SW/NE	40.00	W&A	X	RRLC	1905-07	35, tx						
SE/NE	40.00	JSP	X	BLC	1902-04	tx						
#1	39.98	W&A	X	RRLC	1905-07	35, tx						
#2	20.35	W&A	X	RRLC	1905-07	35, tx						
SW/NW	40.00	W&A	X	RRLC	1905-07	35, tx						
SE/NW	40.00	W&A	X	RRLC	1905-07	35, tx						
NE/SW	40.00	W&A	X	RRLC	1905-07	35, tx						
NW/SW	40.00	W&A	X	RRLC	1905-07	35, tx						
SW/SW	40.00	GC	X	BLC	1904-06 (1905-06)	34, tx						
SE/SW	40.00	GC	X	BLC	1904-06 (1905-06)	34, tx						
NE/SE	40.00	JSP	X	BLC	1902-04	tx						
NW/SE	40.00	W&A	X	RRLC	1905-07	35, tx						
SW/SE	40.00	EH	---			72						
SE/SE	40.00	JSP	X	BLC	1902-04	tx						
Section 9												
NE 1/4	160.00	US	---			3	100	0				100 B
NE/NW	40.00	PTMC	---			52	50	0				50 B
							166	32				198 P
NW/NW	40.00	PTMC	---			52	165	0				165 B
							205	10				215 P
SW/NW	40.00	PTMC	---			52	300	25				325 B
							227	41	12			280 P
SE/NW	40.00	PTMC	---			52	230	15				245 B
							201	29				230 P
NE/SW	40.00	PTMC	---			52	50	0				50 B
							220	5	50			275 P
NW/SW	40.00	PTMC	---			52	100	0				100 B
							132	43	10			185 P
SW/SW	40.00	PTMC	---			52	50	0				50 B
							85	20	15			120 P
SE/SW	40.00	PTMC	---			52	75	0				75 B
							105	4				109 P
NE/SE	40.00	PTMC	---			52	25	25				50 B
							130	100	0			230 P
NW/SE	40.00	PTMC	---			52	50	0				50 B
							95	40	80			215 P
SW/SE	40.00	PTMC	---			52	375	0				375 B
							365	40	20			425 P
SE/SE	40.00	PTMC	---			52	50	50				100 B
							55	120				175 P
Section 10												
NE/NE	40.00	US	---			3	127*	268*				395* B
NW/NE	40.00	US	---			3	*	*				* B
SW/NE	40.00	W&A	---			49	175	100				275 B
#1	39.25	US	---			3	*	*				* B
NW/NW	40.00	US	---			3	*	*				* B
SW/NW	40.00	US	---			3	*	*				* B
SE/NW	40.00	W&A	---			49	300	125				425 B
							300	220				520 P

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M ft.)					
							NP	WP	JP	SP	TH	TOTAL C
TWP 143-36												
Section 10 (continued)												
NE/SW	40.00	W&A	---			49	80	250			330	B
							60	240			300	P
NW/SW	40.00	US	---			3	*	*			*	
SW/SW	40.00	W&A	---			49	120	250			370	B
							55	320			375	P
SE/SW	40.00	W&A	---			49	55	130			185	B
							129	252			381	P
#2	30.65	US	---			3	*	*			*	
NW/SE	40.00	W&A	---			49	0	0			0	B
							15	31		22	68	P
#3	47.75	US	---			3	*	*			*	
#4	2.80	GNRC	---			9	*	*			*	
Section 11												
#2	39.80	US	---			3	20*	20*			40*	B
#3	23.60	US	---			3	*	*			*	
#4	30.25	US	---			3	*	*			*	
#1	16.70	US	---			3	*	*			*	
#5	12.20	US	---			3	*	*			*	
#6	35.00	JSP	X	BLC	1903-04	28,29	12	8			20	B
#7	37.90	US	---			3	*	*			*	
#8	38.05	US	---			3	*	*			*	
#9	25.85	US	---			3	*	*			*	
Section 12												
NE/NE	40.00	US	---			3	25	25			50	B
NW/NE	40.00	W&A	---			49	250	275			525	B
							70	145			215	P
SW/NE	40.00	W&A	---			49	175	250			425	B
							55	120			175	P
SE/NE	40.00	W&A	---			49	60	90			150	B
							125	95			220	P
NE/NW	40.00	W&A	---			49	150	150			300	B
							115	105			220	P
NW/NW	40.00	US	---			3	150*	150*			300*	B
SW/NW	40.00	US	---			3	*	*			*	
SE/NW	40.00	W&A	---			49	115	125			240	B
							75	140			215	P
#3	26.65	W&A	---			32	25	30			55	B
							--	--			95	K
#4	17.80	US	---			3	*	*			*	
#5	15.55	US	---			3	0	0			0	B
NE/SE	40.00	W&A	---			33	60	74			134	B
							190				195	K
#2	38.75	W&A	---			33	60	45			105	B
							170				175	K
#1	22.70	W&A	---			33	90	30			120	B
							120	200			320	K
SE/SE	40.00	W&A	---			33	60	50			110	B
							300				310	K
Section 13												
#1	54.50	JSP	---			14	475	140			615	B
#4	47.25	JSP	---			14	156	225			381	B
#2	23.20	US	---			3	30*	70*			100*	B
NW/NW	80.00	US	---			3	*	*			*	
#3	39.25	US	---			3	*	*			*	
#6	39.90	US	---			3	*	*			*	
NW/SW	80.00	US	---			3	*	*			*	
#7	39.50	US	---			3	*	*			*	

LEGAL DESCRIPTION	ACRES	OWNER	CMT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M ft.)					
							NP	WP	JP	SP	TI	TOTAL C
TWP 143-36												
Section 13 (continued)												
#5	38.90	JSP	---			14	350	137				487 B
#8	14.55	US	---			3	*	*				*
#9	24.30	JSP	---			14	100	100				200 B
Section 14												
NE 1/4	160.00	US	---			3	100*	0*				100* B
E 1/2 NW	80.00	US	---			3	*	*				*
NW 1/4	40.00	JSP	X	BLC	1903-04	28,29	70	30				100 B
SW 1/4	40.00	JSP	X	BLC	1903-04	28,29	125	35				160 B
SW 1/4	160.00	US	---			3	*	*				*
SE 1/4	160.00	US	---			3	*	*				*
Section 15												
#1	13.90	JSP	---			14	52	10				62 B
#2	29.50	GNRC	---			9	5	15				20 B
#4	36.10	JSP	---			14	90	10				100 B
NE 1/4	40.00	GNRC	---			9	7	20				27 B
NW 1/4	40.00	PTMC	---			52	75	75				150 B
SW 1/4	40.00	PTMC	---			52	145	40	10		15	210 P
							30	0				30 B
							73	12	20		15	120 P
#3	45.70	NPRC	---			4	20	0				20 B
#9	55.60	PTMC	---			52	425	0				425 B
							650	50			15	715 P
#8	29.45	PTMC	---			52	35	0				35 B
							170	40			25	235 P
#7	6.60	NPRC	---			4	15*	15*				30* B
#5	37.50	PTMC	---			52	75	0				75 B
							64	6				70 P
#6	40.10	NPRC	---			4	*	*				*
SE/SE	40.00	NPRC	---			4	*	*				*
Section 16												
	640.00	SL	---			2	1800	700				2500 B
Section 17												
NE/NE	40.00	PTMC	X	PTLC	1915-17	64						
NW/NE	40.00	PTMC	X	PTLC	1915-17	64						
SW/NE	40.00	PTMC	X	PTLC	1915-17	64						
SE/NE	40.00	MM	X	PTLC	1915-17	17,42						
NE/NW	40.00	PTMC	X	PTLC	1915-17	64						
#1	28.20	PTMC	X	PTLC	1915-17	64						
SW/NW	40.00	PTMC	X	PTLC	1915-17	64						
SE/NW	40.00	PTMC	X	PTLC	1915-17	64						
NE/SW	40.00	PTMC	X	PTLC	1916-17	63,64						
NW/SW	40.00	PTMC	X	PTLC	1916-17	63,64						
SW/SW	40.00	PTMC	X	PTLC	1915-17	64						
SE/SW	40.00	PTMC	X	PTLC	1915-17	64						
NE/SE	40.00	MM	X	PTLC	1915-17	17,42						
NW/SE	40.00	PTMC	X	PTLC	1915-17	64						
S 1/2 SE	80.00	MM	X	PTLC	1915-17	17,42						

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M c.)					
							NP	WP	JP	SP	TM	TOTAL C
TWP 143-36												
Section 18												
#1	14.65	B&H	X	?	1905-07	tx						
#2	35.30	W&N	X	RRLC	1905-07	35, tx						
#3	29.45	W&A	X	RRLC	1905-07	35, tx						
#4	29.45	CC	X	BLC	1904-06 (1905-06)	34, tx						
NE/NW	40.00	W&A	X	RRLC	1905-07	35, tx						
#5	36.00	W&N	X	RRLC	1905-07	35, tx						
#6	36.00	CC	X	BLC	1904-06 (1905-06)	34, tx						
SE/NW	40.00	W&A	X	RRLC	1905-07	35, tx						
NE/SW	40.00	W&A	X	RRLC	1905-07	35, tx						
#7	36.00	W&A	X	RRLC	1905-07	35, tx						
#8	36.00	W&N	---			72	128	5	2			135 D
SE/SW	40.00	W&A	X	RRLC	1905-07	35, tx						
NE/SE	40.00	CC	X	BLC	1904-06 (1905-06)	34, tx						
NW/SE	40.00	CC	X	BLC	1904-06 (1905-06)	34, tx						
SW/SE	40.00	W&A	X	RRLC	1904-06	35, tx						
SE/SE	40.00	W&A	X	RRLC	1904-06	35, tx						
Section 19												
NE/NE	40.00	PTMC	X	PTLC	1915-17	64						
NW/NE	40.00	PTMC	X	PTLC	1915-17	64						
SW/NE	40.00	PTMC	X	PTLC	1915-17	64						
SE/NE	40.00	PTMC	X	PTLC	1915-17	64						
NE/NW	40.00	PTMC	X	PTLC	1915-17	64						
#1	36.06	PTMC	X	PTLC	1915-17	64						
#2	36.17	PTMC	X	PTLC	1917-18	65						
SE/NW	40.00	PTMC	X	PTLC	1915-17	64						
NE/SW	40.00	PTMC	X	PTLC	1915-17	64						
#3	36.29	PTMC	X	PTLC	1915-17	64						
#4	36.40	PTMC	X	PTLC	1915-17	64						
SE/SW	40.00	PTMC	X	PTLC	1915-17	64						
NE/SE	40.00	PTMC	X	PTLC	1915-17	64						
NW/SE	40.00	PTMC	X	PTLC	1915-17	64						
SW/SE	40.00	PTMC	X	PTLC	1915-17	64						
SE/SE	40.00	PTMC	X	PTLC	1915-17	64						
Section 20												
NE/NE	40.00	EW	X	PTLC	1915-16	26, 42, 65						
NW/NE	40.00	JSP	X	BLC	1902-04	tx						
SW/NE	40.00	W&A	X	RRLC	1905-07	35						
SE/NE	40.00	EW	X	PTLC	1915-16	26, 42, 65						
NE/NW	40.00	JSP	X	BLC	1902-04	tx						
NW/NW	40.00	W&A	X	RRLC	1905-07	35						
SW/NW	40.00	W&A	X	RRLC	1905-07	35						
SE/NW	40.00	W&A	X	RRLC	1905-07	35						
NE/SW	40.00	JSP	X	BLC	1902-04	tx						
NW/SW	40.00	W&A	X	RRLC	1905-07	35						
SW/SW	40.00	W&A	X	RRLC	1905-07	35						
SE/SW	40.00	W&A	X	RRLC	1905-07	35						
NE/SE	40.00	EW	X	PTLC	1915-16	26, 42, 64						
NW/SE	40.00	JSP	X	BLC	1902-04	tx						
SW/SE	40.00	JSP	X	BLC	1902-04	tx						
SE/SE	40.00	JSP	X	BLC	1902-04	tx						

LEGAL DESCRIPTION	ACRES	GRFPE	CUT	LOCATED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M C.)					TOTAL	C
							HP	MP	LP	SP	EM		
TWP 143-36													
Section 21													
NE/NE	40.00	LIDR	---			5	25	0				25	B
NW/NE	40.00	PTMC	Xp			67,69	30	0				30	B
SW/NE	40.00	PTMC	Xp			67,69	230	0				230	B
SE/NE	40.00	WSA	---			49	15	0				15	B
							132	2	48	14		196	P
NE/NW	40.00	PTMC	Xp			67,69	50	25				75	B
NW/NW	40.00	PTMC	Xp			67,69	30	0				30	B
SW/NW	40.00	PTMC	---			4	15*	0*				15*	B
SE/NW	40.00	PTMC	Xp			67,69	15	0				15	B
NE/SW	40.00	NPRC	---			4	*	*				*	
NW/SW	40.00	NPRC	---			4	*	*				*	
SW/SW	40.00	NPRC	---			4	*	*				*	
SE/SW	40.00	PTMC	---			67,69	200	70				270	B
NE/SE	40.00	GNRC	---			5	130	43				175	B
NW/SE	40.00	PTMC	Xp	PTLC	1918-19	67,69	230	0				230	B
SW/SE	40.00	PTMC	Xp	PTLC	1918-19	67,69	500	50				550	B
SE/SE	40.00	PTMC	Xp	PTLC	1918-19	67,69	100	0				100	B
Section 22													
#1	42.05	US	---			3						400*	B
#2	56.25	GNRC	---			9						*	
#3	55.30	US	---			3						*	
#4	33.65	US	---			3						*	
NW/SW	40.00	US	---			3						*	
SW/SW	40.00	US	---			3						*	
SE/SW	40.00	US	---			3						*	
#5	43.45	US	---			3						*	
#6	13.75	US	---			3						*	
Section 23													
NEk	160.00	US	---			3	100*	10*				110*	B
N $\frac{1}{2}$ /NW	80.00	NPRC	---			4	*	*				*	
#1	35.75	PTMC	---			67	40	4				44	B
SE/NW	40.00	NPRC	---			4	*	*				*	
NE/SW	40.00	PTMC	Xp	PTLC	1918-19	67,69	60	25				85	B
#2	26.20	PTMC	---			67	90	0				90	B
#3	39.75	PTMC	---			67	100	25				125	B
SE/SW	40.00	PTMC	Xp	PTLC	1918-19	67,69	110	145				255	B
N $\frac{1}{2}$ /SE	80.00	NPRC	---			4	*	*				*	
SW/SE	40.00	PTMC	Xp	PTLC	1918-19	67,69	80	0				80	B
SE/SE	40.00	NPRC	---			4	*	*				*	
Section 24													
#1	9.15	US	---			3	50	50				100	B
#3	46.30	WSA	---			32	60	75				135	B
							--	--				165	K
SW/NE	40.00	WSA	---			32	20	30				50	B
							--	--				140	K
#2	37.40	WSA	---			32	200	25				225	B
							--	--				290	K
NE/NW	40.00	WSA	---			32	40	20				60	B
							--	--				110	K
NW/NW	40.00	WSA	---			32	90	0				90	B
							--	--				60	K
SW/NW	40.00	JSP	---			27,29	100	0				100	B
												125	K
SE/NW	40.00	WSA	---			32	55	15				70	B
							--	--				95	

LEGAL	ACRES	OWNER	CUT	LOGGED	BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M (L.))					
DESCRIPTION								NP	WT	JT	SP	DI	TOTAL C
TWP 143-36													
Section 27 (continued)													
NE/SW	40.00	PTMC	Xp	PTLC		1918-19	67,68	225	50				275 E
NW/SW	40.00	PTMC	Xp	PTLC		1918-19	67,68	300	80				380 E
SW/SW	40.00	PTMC	Xp	PTLC		1918-19	67,68	115	100				215 E
SE/SW	40.00	PTMC	Xp	PTLC		1918-19	67,68	110	10				120 E
NE/SE	40.00	PTMC	Xp	PTLC		1918-19	67	225	75				300 B
NW/SE	40.00	PTMC	Xp	PTLC		1918-19	67	50	0				50 B
SW/SE	40.00	LTER	---				5	*	*				*
SE/SE	40.00	PTMC	Xp	PTLC		1918-19	67	150	50				200 B
Section 28													
NE/NE	40.00	JSP	---				14	450	50				500 B
NW/NE	40.00	JSP	---				14	125	63				188 B
SW/NE	40.00	US	---				3	150*	50*				200 B
SE/NE	40.00	JSP	---				14	50	0				50 B
NW $\frac{1}{2}$	160.00	US	---				3	*	*				*
SW $\frac{1}{2}$	160.00	US	---				3	*	*				*
SE $\frac{1}{2}$	160.00	US	---				3	*	*				*
Section 29													
NE/NE	40.00	PTMC	X	PTLC		1917-18	64						
NW/NE	40.00	PTMC	X	PTLC		1917-18	64						
SW/NE	40.00	PTMC	X	PTLC		1917-18	64						
SE/NE	40.00	PTMC	X	PTLC		1917-18	64						
NE/NW	40.00	PTMC	X	PTLC		1917-18	64						
NW/NW	40.00	PTMC	X	PTLC		1917-18	64						
SW/NW	40.00	NPRC	---				71						
SE/NW	40.00	PTMC	X	PTLC		1917-18	64						
NE/SW	40.00	PTMC	X	PTLC		1917-18	64						
NW/SW	40.00	PTMC	X	PTLC		1917-18	64						
SW/SW	40.00	PR	(X)	?		(1916-18)	tx						
SE/SW	40.00	NPRC	---				71						
NE/SE	40.00	PTMC	X	PTLC		1917-18	64						
NW/SE	40.00	PTMC	X	PTLC		1917-18	64						
SW/SE	40.00	PTMC	X	PTLC		1917-18	64						
SE/SE	40.00	PTMC	X	PTLC		1917-18	64						
Section 30													
NE/NE	40.00	JSP	X	BLC		1902-04	tx						
NW/NE	40.00	JSP	X	BLC		1902-04	tx						
SW/NE	40.00	JSP	X	BLC		1902-04	tx						
SE/NE	40.00	JSP	X	BLC		1902-04	tx						
NE/NW	40.00	JSP	X	BLC		1902-04	tx						
#1	36.75	JSP	X	BLC		1902-04	tx						
#2	37.23	JSP	X	BLC		1902-04	tx						
SE/NW	40.00	JSP	X	BLC		1902-04	tx						
NE/SW	40.00	JSP	X	BLC		1902-04	tx						
#3	37.90	JSP	X	BLC		1902-04	tx						
#4	38.47	JSP	X	BLC		1902-04	tx						
SE/SW	40.00	JSP	X	BLC		1902-04	tx						
NE/SE	40.00	JSP	X	BLC		1904-06	tx						
NW/SE	40.00	JSP	X	BLC		1904-06	tx						
SW/SE	40.00	JSP	X	BLC		1904-06	tx						
SE/SE	40.00	JSP	X	BLC		1904-06	tx						
Section 31													
NE/NE	40.00	EH	X	PTLC		1914-15	53,58						35 W
NW/NE	40.00	PTMC	X	PTLC		1914-15	58						
SW/NE	40.00	PTMC	X	PTLC		1914-15	58						
SE/NE	40.00	PTMC	X	PTLC		1914-15	58						

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M BLS.)					
							NP	WP	JP	SP	TM	TOTAL C
TWP 143-36												
Section 31 (continued)												
NE/1/4	40.00	PTMC	X	PTLC	1914-15	58						
#1	38.96	PTMC	X	PTLC	1914-15	58						
#2	39.35	PTMC	X	PTLC	1914-15	58						
SE/1/4	40.00	PTMC	X	PTLC	1914-15	58						
NE/2/4	40.00	PTMC	X	PTLC	1914-15	58						
#3	39.95	PTMC	X	PTLC	1914-15	58						
#4	40.14	NPRC (---)				75						
SE/2/4	40.00	PTMC	X	PTLC	1914-15	58						
NE/SE	40.00	PTMC	X	PTLC	1914-15	58						
NW/SE	40.00	FH	X	LZS	1903-08	19,70						
SW/SE	40.00	FH	X	LZS	1903-08	19,70						
SE/SE	40.00	FH	X	LZS	1903-08	19,70						
Section 32												
NE/NE	40.00	AS	X	NCLC	1916-19 (1918-19)	36,60						
NW/NE	40.00	AS	X	NCLC	1916-19 (1918-19)	36,60						
SW/NE	40.00	NJ	(X)	?	(1912-14)	tx						
SE/NE	40.00	PTMC	X	PTLC	1914-15	51,tx						
NE/NW	40.00	AS	X	NCLC	1916-19 (1918-19)	36,60						
NW/NW	40.00	AS	X	NCLC	1916-19 (1918-19)	36,60						
SW/NW	40.00	FC	X	?	(1912-14)	tx,fc						
SE/NW	40.00	NJ	(X)	?	(1912-14)	tx						
NE/2/4	40.00	NJ	(X)	?	(1912-14)	tx						
NW/2/4	40.00	FC	X	?	(1912-14)	tx,fc						
SW/2/4	40.00	FC	X	?	(1912-14)	tx,fc						
SE/2/4	40.00	FC	X	?	(1912-14)	tx,fc						
NE/SE	40.00	PTMC	X	PTLC	1914-15	51,tx						
NW/SE	40.00	NJ	(X)	?	(1912-14)	tx						
S1/4/SE	80.00	PTMC	X	PTLC	1914-15	51,tx						
Section 33												
NE/NE	40.00	NPRC	---			4	100*	0*				100* S
N1/4/NE	80.00	NPRC	---			4	*	*				*
#1	34.75	PTMC	Xp	PTLC		67	85	10				95 B
							180	45	50	15		285 J
N1/4/NW	80.00	NPRC	---			4	*	*				*
SW/NW	40.00	LFDR	---			5	*	*				*
SE/NW	40.00	NPRC	---			4	*	*				*
SW1/4	160.00	NPRC	---			4	*	*				*
#6	4.85	NPRC	---			4	*	*				*
#2	41.10	NPRC	---			4	*	*				*
#3	54.50	NPRC	---			4	*	*				*
#4	.01	NPRC	---			4	*	*				*
#5	8.70	NPRC	---			4	*	*				*
Section 34												
NE/NE	40.00	W&A	---			49	200	30				230 B
NW/NE	40.00	W&A	---			49	128	21			20	169 P
							325	25				350 B
SW/NE	40.00	W&A	---			49	220	60			24	304 P
							50	0				50 B
							205	10				215 P
SE/NE	40.00	W&A	---			49	175	30				205 B
							116	27			15	158 P

LEGAL DESCRIPTION	ACRES	OWNER	CUT	LOGGED BY	YEAR(S)	SOURCE	TIMBER ESTIMATES (M B)					
							NP	WP	JP	SP	TM	TOTAL
TWP 143-36												
Section 34 (continued)												
NE/NW	40.00	JSP	---			27,29	325	175			500	B
							--	--			150	K
NW/NW	40.00	JSP	---			27,29	100	85			185	B
							170	0				K
#1	39.35	JSP	---			27,29	100	5			105	B
							--	--			130	K
SE/NW	40.00	JSP	---			27,29	60	0			60	B
							--	--			10	K
NE/SW	40.00	US	---			3	150*	0*			150*	B
#2	34.35	US	---			3	*	*			*	
#3	17.90	US	---			3	*	*			*	
#4	45.15	US	---			3	*	*			*	
SE $\frac{1}{4}$	160.00	US	---			3	*	*			*	
Section 35												
NE/NE	40.00	PTMC	---			67	25	30			55	B
NW/NE	40.00	PTMC	Xp	PTLC	1918-19	67	30	3			33	B
S $\frac{1}{4}$ /NE	30.00	NPRC	---			4	150*	0*			150*	B
NE/NW	40.00	PTMC	Xp	PTLC	1918-19	67	140	0			140	B
NW/NW	40.00	PTMC	Xp	PTLC	1918-19	67	650	25			675	B
SW/NW	40.00	PTMC	Xp	PTLC	1918-19	67	115	0			115	B
SE/NW	40.00	NPRC	---			4	*	*			*	
NE/SW	40.00	PTMC	Xp	PTLC	1918-19	67	50	0			50	B
NW/SW	40.00	NPRC	---			4	*	*			*	
S $\frac{1}{4}$ /SW	80.00	NPRC	---			4	*	*			*	
NE/SE	40.00	PTMC	---			67	10	0			10	B
NW/SE	40.00	NPRC	---			4	*	*			*	
S $\frac{1}{4}$ /SE	80.00	NPRC	---			4	*	*			*	
Section 36												
	640.00	SL				2	2500	800			3300	B
TWP 144-36												
Section 34												
NE/SE	40.00	JK	X	CLC	1903-04	31						
NW/SE	40.00	JK	(X)	(CLC)	(1903-04)							
SW/SE	40.00	GH	(X)	(CLC)	(1903-04)							
SE/SE	40.00	GH	X	CLC	1903-04	31						
Section 35												
SW/NE	40.00	TBW	X	RRLC	1903-04	30						
N $\frac{1}{4}$ /SW	80.00	HS	---			18						
#2	38.90	HS	---			18,24						
#1	33.90	HS	---			18,24						
SE $\frac{1}{4}$	160.00	TW	X	CLC	1903-04	31						

SOURCES

1. LAND GRANT
State Swamp Selections 143-35 S:6 #1, SE/NE
n.d.
Land and Timber
82.67 acres

2. TRUST FUND
School Land to State 143-36 S:16 Entire Section
n.d. S:36 Entire Section
Land and Timber
1,280.00 acres

3. WARPANTY DEED
Federal Grant to State 143-35 S:6 SW/SE, #6
Aug. 3, 1892 S:18 E $\frac{1}{2}$ /NE, SE $\frac{1}{4}$, #3
Land and Timber S:19 W $\frac{1}{2}$ /NE, SE/SE
7,030.99 acres S:31 NW/NE
142-35 S:6 #1, SW/NE, W $\frac{1}{2}$ /SE
143-36 S:1 #3, 4, S $\frac{1}{2}$ /NW, SW $\frac{1}{4}$, SE $\frac{1}{4}$
S:2 #3, 4, 5, 7, 8, 9,
NW/SW
S:3 #1, 2, 3, 4, S $\frac{1}{2}$ /NE,
S $\frac{1}{2}$ /NW, SW $\frac{1}{4}$, W $\frac{1}{2}$ /SE
S:4 #1, S $\frac{1}{2}$ /NE, S $\frac{1}{2}$ /SW, SE $\frac{1}{4}$
S:9 NE $\frac{1}{4}$
S:10 #1, 2, 3, N $\frac{1}{2}$ /NE, N $\frac{1}{2}$ /NW
SW/NW, NW/SW
S:11 #1, 2, 3, 4, 5, 7, 8, 9
S:12 NE/NE, W $\frac{1}{2}$ /NW, #4, 5
S:13 #2, 3, 6, 7, 8, W $\frac{1}{2}$ /NW,
W $\frac{1}{2}$ /SW
S:14 NE $\frac{1}{4}$, E $\frac{1}{2}$ /NW, SW $\frac{1}{4}$, SE $\frac{1}{4}$
S:22 #1, 3, 4, 5, 6, W $\frac{1}{2}$ /SW,
SE/SW
S:23 NE $\frac{1}{4}$
S:24 #1, NE/SW, W $\frac{1}{2}$ /SE, SE/SE
S:26 N $\frac{1}{2}$ /NE, NW/NW, NW/SW
S:28 SW/NE, NW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$
S:34 #2, 3, 4, NE/SW, SE $\frac{1}{4}$
142-36 S:2 Entire Section
S:4 Entire Section

4. WARRANTY DEED
 Northern Pacific Rwy. Co. to 142-36 S:1 NE/SE, S $\frac{1}{2}$ /SW, NE/SW
 State S $\frac{1}{2}$ /NW, #4
 Nov. 30, 1892 S:3 SE/SE, #1, 4, 5, 6, 7,
 Land and Timber 8, 11, 12, 13
 2,252.96 acres 143-36 S:15 SE/SE, #3, 6, 7
 \$1,126.48 S:21 SW/SW, N $\frac{1}{2}$ /SW, SW/NW
 S:23 N $\frac{1}{2}$ /NW, SE/NW, N $\frac{1}{2}$ /SE,
 SE/SE
 S:25 SE/NW, SW $\frac{1}{2}$
 S:27 N $\frac{1}{2}$ /NE, SW/NE
 S:33 N $\frac{1}{2}$ /NE, SW/NE, N $\frac{1}{2}$ /NW,
 SE/NW, SW $\frac{1}{2}$, #2, 3, 4,
 5, 6
 S:35 S $\frac{1}{2}$ /NE, SE/NW, W $\frac{1}{2}$ /SW,
 SE/SW, W $\frac{1}{2}$ /SE, SE/SE
5. WARRANTY DEED
 Little Falls & Dakota Rwy. Co. 143-36 S:3 E $\frac{1}{2}$ /SE
 to State S:21 NE/NE
 Nov. 30, 1892 S:27 SW/SE
 Land and Timber S:33 SW/NW
 200.00 acres
 \$200.00
6. WARRANTY TIMBER DEED
 C.A. Smith Lbr. Co. to 143-35 S:7 #3
 J.S. Pillsbury
 July 5, 1899
 \$1.00
 "... all timber of every nature... to remove until
 July 5, 1905".
7. WARRANTY TIMBER DEED
 Shutte et al. to H.C. Akeley 143-35 S:31 E $\frac{1}{2}$ /NE
 Lbr. Co.
 Oct. 26, 1899
 "... conveying interest in timber with right to enter upon
 and remove within two years from date".

8. WARRANTY DEED
 McMullen to State 143-36 S:2 #1, 2, 6, SE/NE
 Dec. 26, 1899
 Land and Timber
 155.75 acres
 \$1,623.75

9. WARRANTY DEED
 Great Northern Rwy. Co. to State 143-36 S:10 #4
 Aug. 13, 1900 S:15 #2, NE/NW
 Land and Timber S:21 NE/SE
 168.55 acres S:22 #2
 \$755.00

10. BROWER, J.V. 1904
 p. 196 - 198 143-35 S:19 #1
 Dec. 1902

"A common marauder named Wolf was placed in charge of the camp of Bonnes & Co. on the shore of Bud Lake. He proceeded to bridge Mary Creek lengthwise with logs to construct a logging road, establish two log landings on park land and stole about 250 logs from adjoining property, in the meantime stripping clean of all standing timber /on/ 49.35 acres of land at Schoolcraft Hill /lot 1/, finally leaving the southwest extremity of Itasca Lake and its beautifully wooded shores selected as the site of the new park house, about as a tempestuous cyclone would make it appear." (The contract was given to Bonnes & Co. for removing down timber during the winter of 1901-02.)

11. MISC. PAPERS - State Auditor
 n.d. 143-35 S:18 #4
 S:19 #1

Maps show lot 4 of section 19 cut over and lot 4 of section 18 partially cut over during the winter of 1901-02. This appears to correspond to Brower's account of the illegal cutting on Schoolcraft Hill by Bonnes & Co. (see source #10).

12. MISC. PAPERS - State Auditor
 n.d. 143-35 S:31 E $\frac{1}{2}$ /NE

Papers include a map showing the E $\frac{1}{2}$ /NE of section 31 as cut over 1901-02.

13. MISC. PAPERS - State Auditor
n.d. 142-35 S:6 #3, 4, 5, 6, E $\frac{1}{2}$ /SE

Papers include a map indicating areas cut over 1901-02.

14. WARRANTY DEED
Pillsbury Estate to State 143-36 S:13 #1, 4, 5, 9
Apr. 14, 1902 S:15 #1, 4
3,038 M ft. S:28 E $\frac{1}{2}$ /NE, NW/NE
334.95 acres
\$17,379.94

15. WARRANTY TIMBER DEED
B. Webster to T. Shavlin 143-35 S:6 #4
Apr. 17, 1902

Notice of Timber Cut -

"timber has been cut upon all lands including
lot 4 of section 6 143-35".

16. WARRANTY DEED
N. Rust to State 143-36 S:2 #2
Sept. 18, 1902
\$900.00

The three acres owned by Rust, located in the northwest
corner of lot 2, were partially cultivated.

17. WARRANTY TIMBER DEED
M. Magnussen to PTLC 143-36 S:17 SE/NE, NE/SE, S $\frac{1}{2}$ /SE
Sept. 21, 1902
\$900.00

"convey all timber ... to remove within ten years from date".

18. WARRANTY DEED
H.C. Stewart to State 144-36 S:35 N $\frac{1}{2}$ /SW, #1, 2
Nov. 22, 1902
Land and Timber
\$1,200.00

19. WARRANTY TIMBER DEED
F. Hall to L. Z. Smith 143-36 S:31 S $\frac{1}{2}$ /SE, NW/SE
Jan. 12, 1903
\$1,000.00

"... conveying all timber on land to remove in 5 years".

20. CORRESPONDENCE - State Auditor
T. Fitzgerald to S.G. Iverson 143-35 S:7 #3
Mar. 25, 1903

"... has been cut clean during the winter of 1902-03... timber small but good quality ... estimate 100 M ft. ... landed in Lake Itasca on section 12 143-36 ... by the Grand Forks Lumber Company".

21. CORRESPONDENCE - State Auditor
T. Fitzgerald to S.G. Iverson 143-35 S:6 #2
Mar. 27, 1903

"280,000 ft. of pine logs were cut on the NW/NE or lot 2 of section 6 143-35. 150,000 hauled and landed in LaSalle Lake (section: 18 & 19 144-35), 100,000 on skidways on the ground and 30,000 on ground where cut. The party has broke camp and moved out. Cutting done by John Cabbin under supervision of C. L. Smith for Grand Forks Lbr. Co. The timber was mostly Norway, generally small but sound and thrifty. There is 40,000 ft. of standing pine left on this tract."

22. CORRESPONDENCE - State Auditor
T. Fitzgerald to S.G. Iverson 143-35 S:6 #3, SW/NE
Mar. 27, 1903

"50,000 ft. cut 1902-03 ... mostly Norway, generally small, good, thrifty. The greater portion of this tract (SW/NE) was cut over and timber hauled away during winter of 1901-02." An attached map shows lot 3 cut over 1901-02 and SW/NE cut 1901-02 and completed in 1902-03.

23. CORRESPONDENCE - State Auditor
T. Fitzgerald to S.G. Iverson 143-36 S:4 S $\frac{1}{2}$ /SW
Mar. 30, 1903

Fitzgerald mentions unintentional trespassing by the Brainerd Lbr. Co. during the winter of 1902-03 involving 43 pine trees, 135 logs and estimated at 9,000 feet.

24. MISC. PAPERS - State Auditor
Apr. 2, 1903 144-36 S:35 #1, 2

"...(they) cut small jack pine on SW/SW (#2) for dam... no commercial value but destroys appearance. Also cut 7 jack pine trees estimated 1,000 ft. on S $\frac{1}{2}$ /SW (#1, 2)."

25. MISC. PAPERS - State Auditor
n.d. 143-36 S:4 #4, SW/NW, NW/SW,
SE/NW, NE/SW

Papers include a map showing lot 4, SW/NW, west half of SE/NW and all but the northeast corner of NE/SW of section 4 143-36 as cut over 1902-03. The remaining Pillsbury timber on this section is described as "good pine".

26. WARRANTY TIMBER DEED
E. Wahl to PTLG 143-36 S:20 E $\frac{1}{2}$ /NE, NE/SE
Sept. 21, 1903
\$600.00

"... to cut within ten years of date"

27. BROWER, J. V. 1904
p. 224 143-36 S:24 SW/NW, W $\frac{1}{2}$ /SW, SE/SW
Sept. 28, 1903 S:26 SW/NE, NE/NW, S $\frac{1}{2}$ /NW
S:34 NW $\frac{1}{2}$

"Whereas, The said Company has heretofore and will hereafter refrain from cutting certain pine owned by it and situated in said Park upon sections 24, 26 and 34 which it is important that the State should purchase for the purpose of preserving the Park in the condition prescribed by various acts of the Legislature..."

28. BROWER, J. V. 1904
p. 224 143-36 S:11 #6
Sept. 28, 1903 S:14 W $\frac{1}{2}$ /NW

"Provided, the Brainerd Lumber Company and the public authorities of the State of Minnesota are prior to December 1st, 1903 unable to agree upon the amount of pine situated upon the SW $\frac{1}{2}$ of SW $\frac{1}{2}$ of section 11, and the W $\frac{1}{2}$ NW $\frac{1}{2}$ of section 14 in said Township, and the authorities representing the said State fail to purchase the pine situated thereon, or to institute condemnation proceedings for the purpose of acquiring said land, prior to said date, the said Brainerd Lumber Company is authorized and empowered to deposit upon the ice in Itasca Lake during December, 1903, and January 1904,

pine which may be now growing thereon."

S. R. Van Sant, Governor
S. G. Iverson, State Auditor
John B. Sanborn, President M.H.S.

29. WARRANTY DEED
Pillsbury Estate to State 143-35 S:6 #3, SW/NE*
Nov. 5, 1903 S:18 #4*
2,810 M ft. 143-36 S:4 NW $\frac{1}{4}$ *, #2, NW $\frac{1}{2}$ /SW*
1,010.25 acres S:11 #6*
\$17,475.70 S:14 W $\frac{1}{2}$ /NW*
S:24 SW/NW, W $\frac{1}{2}$ /SW, SE/SW
S:26 SW/NE, E $\frac{1}{2}$ /NW, SW/NW
S:34 NW $\frac{1}{2}$ /NW, #1, SE/NW

* assumed to have been cut over

30. BROWER, J. V. 1904
p. 227 144-36 S:35 SW/NE
Jan. 14, 1904

"... license is granted to the said T. B. Walker and authority given to haul said timber so situated in said sections 26 and 35, to Itasca Lake and deposit the same on the ice therein during the months of December, 1903, and January and February, 1904, and to float the same out of said lake by way of the Mississippi River at a date not later than fifteen days from and after the melting and passing out of ice from Itasca Lake in the spring of 1904."

31. BROWER, J. V. 1904
p. 227 144-36 S:34 E $\frac{1}{2}$ /SE
Jan. 15, 1904 S:35 E $\frac{1}{2}$ /NE, SE $\frac{1}{4}$

"Whereas, The Crookston Lumber Company is the owner of certain pine logs heretofore cut, or being cut, upon the SE $\frac{1}{4}$ and the E $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 35, and the E $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 34, 144-36 being outside of, but immediately adjacent to, the boundary limits of said Park: And,

Now, Therefore, License is granted ... to haul said timber and deposit the same upon the ice in Itasca Lake during the months of January and February, 1904 ..."

32. WARRANTY DEED
Walker & Akeley to State 143-36 S:12 #3
Sept. 15, 1904 S:24 #2, 3, SW/NE, N $\frac{1}{2}$ /NW,
? M ft. SE/NW, NE/SE
470.35 acres S:25 NE $\frac{1}{4}$
\$9,995.70

Based on stumpage prices the transaction included 1,100 to 1,500 M ft. of timber.

33. WARRANTY DEED
T. B. Walker to State 143-36 S:12 #1, 2, E $\frac{1}{2}$ /SE
Sept. 15, 1904
? M ft.
141.45 acres
\$6,280.40

Based on stumpage prices the transaction included 700 to 1,000 M ft. of timber.

34. WARRANTY DEED
G. Cook to Brainerd Lbr. Co. 143-36 S:8 S $\frac{1}{2}$ /SW
Nov. 8, 1904 & Dec. 5, 1904 S:18 #4, 6, N $\frac{1}{2}$ /SE

All rights to the land were released to the John Smith Land Co. on April 20, 1906.

35. VANDERSLUIS, C. 1974
Bemidji Daily Pioneer 143-36 S:6 S $\frac{1}{2}$ /NE, W $\frac{1}{2}$ /SE, #8
Aug. 28, 1906 S:8 W $\frac{1}{2}$ /NE, #1, 2, S $\frac{1}{2}$ /NW
R $\frac{1}{2}$ /SW, NW/SE
S:18 #3, 5, 7, E $\frac{1}{2}$ /NW, E $\frac{1}{2}$ /NW
E $\frac{1}{2}$ /SW, S $\frac{1}{2}$ /SE, #2
S:20 SW/NE, NW/NW, S $\frac{1}{2}$ /NW,
W $\frac{1}{2}$ /SW, SE/SW

"Mr. Moberg states that he has finished the grading but has been forced to stop work because of the non-arrival of the rails. There are 12 million feet of logs in Squaw Lake and 4 million in Long Lake on the new line. These are the property of the Red River Lumber Company, and the logs will not be hoisted until the railroad is completed."

36. WARRANTY TIMBER DEEDS

143-36 S:32 N $\frac{1}{2}$ /NE, N $\frac{1}{2}$ /NW

A. D. Stephens to H. C. Clarke

Sept. 16, 1906

\$600.00

"... conveying all merchantable timber ... with right to remove within ten years"

H. C. Clarke to Nichols & Chisolm Lbr. Co.

Nov. 8, 1906

\$600.00

"... giving until Sept. 1916 to cut and remove all merchantable timber"

37. WARRANTY DEED

Walker & Akeley to State

143-35 S:6 #5

Oct. 10, 1908

S:19 #2, NE/NE, #4

? M ft.

S:20 NW/SW

316.72 acres

S:30 #1, 2

\$23,590.35

It was estimated that about 2,300 M ft. of timber was included in the transaction.

38. WARRANTY DEED

Shevlin-Carpenter Co. to State

143-35 S:19 #3

Oct. 19, 1908

S:20 W $\frac{1}{2}$ /NW

? M ft.

S:30 W $\frac{1}{2}$ /#3, W $\frac{1}{2}$ /#4

177.75 acres

\$17,555.76

It is estimated that about 1,700 M ft. of timber was included in the transaction.

39. WARRANTY TIMBER DEED

M. Cummings to J. M. Richards

143-36 S:6 #5, 6, SE/NW, NE/SW

Nov. 16, 1908

\$2,000.00

"... obtains timber rights with right to remove within 5 years"

40. STATE FORESTRY BOARD RECORDS
Dec. 15, 1908 143-35 S:29 NW/NW

The meeting minutes indicate that 40.00 acres and 60,000 feet were recently purchased for \$450.00. Although no legal description was given this transaction corresponds to the following deed:

Warranty Deed
I. Long to State
Sept. 21, 1908
40.00 acres
\$450.00

41. DOBIE, J. 1959
p. 127 143-35 S:7 E $\frac{1}{2}$ /NE, SE/SE, #4
S:18 W $\frac{1}{2}$ /NE, #1, 2
143-36 S:26 SE/NE, E $\frac{1}{2}$ /SW, SE $\frac{1}{2}$

"The Red River Lumber Company had just finished building a logging railroad to the east side of the Park and planned to log its timber during the next winter (1911-12) and haul it to Akeley by rail."

42. EXTENSION OF TIMBER DEED
Magnussen and Wahl to PTLC 143-36 S:17 SE/NE, NE/SE, S $\frac{1}{2}$ /SE
Nov. 22, 1911 S:20 E $\frac{1}{2}$ /NE, NE/SE

"PTLC ... to cut anytime prior to Dec. 16, 1915"

43. CORRESPONDENCE - Imm. Land Co.
B. J. Hinkle to Connor & Wilson 143-35 S:31 #1, 2, 3, 4, SE $\frac{1}{2}$
Nov. 14, 1912 142-36 S:1 #1, 2, 3, S $\frac{1}{2}$ /NE,
NW/SE, S $\frac{1}{2}$ /SE

"We are trying to curtail the cut this year. Try to keep it around 8 million or less. We estimate 9 million in:

143-35 Sec: 31
142-36 Sec: 11, 13, 14
142-25 Sec: 21, 28, 31, 34
142-36 Sec: 25 SE/SE

44. WARRANTY DEED
PTMC to State
Mar. 26, 1913
715 M ft.
\$6,850.00

142-36 S:1 SW/SE, NW/SW
S:3 #2, 3
143-35 S:31 #1, 2

"The State Forestry Board has selected and purchased from the PTMC all timber upon the lands ... described except such portion thereof upon the SW/SE of section 1, lot 3 of section 3 142-36 and lots 1 and 2 of section 31 143-35, as lies outside of a line run upon the ground by said State Forestry Board enclosing the groves of timber upon the said last described lands which have been selected by the state."

45. WARRANTY DEED
PTMC to State
Oct. 10, 1913
? M ft.
\$3,000.00

142-36 S:3 #9, 10 and the
remainder of #3

46. STATE FORESTRY BOARD RECORDS
Oct. 21, 1913

143-35 S:7 E $\frac{1}{2}$ /NE, SE/SE, #4
S:18 W $\frac{1}{2}$ /NE, #1, 2
143-36 S:26 SE/NE, E $\frac{1}{2}$ /SW, SE $\frac{1}{2}$

"The Red River Lumber Company failed to burn in accordance with the instructions ... had it done for \$565.89."

47. WARRANTY TIMBER DEED
G. Breitbach to PTMC
Nov. 1, 1913
\$550.00

142-36 S:5 #2, 3

"conveys all white pine, Norway pine, jack pine, spruce, tamarack and balsam fir timber ... with right of entry within two years from date"

48. STATE FORESTRY BOARD RECORDS
Dec. 11, 1913

142-35 S:6 #2, 3, 4, 5, 6, E $\frac{1}{2}$ /SE
143-35 S:7 E $\frac{1}{2}$ /NE, SE/SE, #4
S:18 W $\frac{1}{2}$ /NE, #1, 2
S:31 SW/NE
143-36 S:26 SE/NE, E $\frac{1}{2}$ /SW, SE $\frac{1}{2}$

Meeting minutes include a discussion of lands to be purchased from the Red River Lbr. Co. It was assumed that all the tracts listed at the meeting which were not included in the 1913 Peterson

Timber Survey were logged. After examining aerial photos the only exception to this appears to be SW/NE of section 31 143-35, which could have been purchased at another date.

49. CORRESPONDENCE - State Forestry Board
 Peterson Timber Survey 143-36 S:1 S $\frac{1}{2}$ /NE, #1, 2
 1913 S:10 SW/NE, SE/NW, E $\frac{1}{2}$ /SW
 SW/SW, NW/SE
 S:12 W $\frac{1}{2}$ /NE, SE/NE, E $\frac{1}{2}$ /NW
 S:21 SE/NE
 S:26 SW/SW
 S:34 NE $\frac{1}{2}$
 143-35 S:6 NW/SE
 S:7 NW/NE, W $\frac{1}{2}$ /SE, #1, 2
 S:19 SE/NE, NE $\frac{1}{2}$ /SE, SW/SE
 S:20 SW/SW
 S:29 SW/NW
 S:30 NE $\frac{1}{2}$, SE $\frac{1}{2}$, E $\frac{1}{2}$ /#3, E $\frac{1}{2}$ /#4

The timber estimates of the surveyed tracts owned by Walker & Akeley closely correspond with the timber purchased in the following transaction found in the State Forestry Board Records which did not contain a legal description.

Walker & Akeley to State
 Aug. 1914
 7,598,500 ft.
 2,658.77 acres
 \$88,078.85

50. CORRESPONDENCE - State Forestry Board
 Peterson Timber Survey 143-35 S:6 E $\frac{1}{2}$ /SE
 1913 S:7 SW/NE

The timber survey describes the E $\frac{1}{2}$ /SE of section 6 and the SW/NE of section 7 143-35 as "cut over".

51. CORRESPONDENCE - Imm. Land Co.
 D. Tierney to B. J. Hinkle 142-36 S:5 Entire Section
 Jan. 3, 1914 143-36 S:32 SE/NE, NE/SE, S $\frac{1}{2}$ /SE

The state offered 20M feet of dead and down timber for sale on the west line of the park since Connor & Wilson would be cutting up to the line that winter.

52. WARRANTY DEED
 PTMC to State 143-36 S:9 NW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$
 Feb. 23, 1914 S:15 #5, 8, 9, W $\frac{1}{2}$ /NW
 3,695 M ft.
 \$36,500.00
 682.55 acres donated
53. CORRESPONDENCE - Imm. Land Co.
 Connor & Wilson to B.J. Hinkle 142-36 S:6 #1
 Apr. 2, 1914 143-36 S:31 NE/NE

 "... send us the Timber Deed for NE/NE (#1) on section 6
 142-36, also NE/NE section 31 143-36"
54. WARRANTY TIMBER DEED
 Walker & Akeley to State 143-35 S:20 SW/SW
 June 1, 1914 S:30 E $\frac{1}{2}$ /NE
 ? M ft.
 120.00 acres
 \$1.00
55. WARRANTY TIMBER DEED
 Red River Lbr. Co. to State 143-35 S:6 NW/SE
 June 1, 1914
 ? M ft.
 40.00 acres
 \$1.00
56. WARRANTY TIMBER DEED
 Beebe & Stone to Walker & Akeley 143-35 S:17 SW $\frac{1}{4}$
 July 6, 1914 S:29 E $\frac{1}{2}$ /SW

 The Timber Deed was returned to Beebe & Stone on July 6, 1914.
57. WARRANTY DEED
 Shevlin-Carpenter Co. to State 142-35 S:6 SE/NE
 Aug. 17, 1914
 ? M ft.
 40.00 acres
 \$240.00

58. CORRESPONDENCE - Imm. Land Co.
B.J. Hinkle to Connor & Wilson 143-36 S:31 #1, 2, 3, NE $\frac{1}{4}$, E $\frac{1}{2}$ /NW,
Sept. 26, 1914 E $\frac{1}{2}$ /SW, NE/SE

"... cut section 31 this winter. Look over sections 19 and 29 to see whether you would care to haul these two sections under the present contract to Two Inlet instead of taking the timber out on some other contract to Itasca Lake."

59. MINNESOTA FORESTRY BOARD - Annual Report
Dec. 1914 143-35 S:7 SW/NE, NE/SE

The report includes a map and picture of a planting site along Hubbard Ravine in Itasca State Park which "once had a beautiful stand of mixed Norway and white pine [which] was cut off four years ago and slashed burned clean". (This is assumed to refer to the C. F. Ruggles property.)

60. TIMBER DEED EXTENSION
A. D. Stephens to Nichols & Chisholm Lbr. Co. 143-36 S:32 N $\frac{1}{2}$ /NE, N $\frac{1}{2}$ /NW

"conveying timber ... anytime before June 6, 1919"

Discharge of Trust to Nichols & Chisholm Lbr. Co. on
April 4, 1919

61. CORRESPONDENCE - Imm. Land Co.
B.J. Hinkle to Connor & Wilson 143-36 S:5 #1, 2, 3, 4, 5, 6, 7,
Dec. 31, 1915 8, NE/SE, S $\frac{1}{2}$ /SE

"We will probably bank 1 to 2 million feet less at Squaw Lake Camp than Itasca Camp."

62. CORRESPONDENCE - Imm. Land Co.
Conner & Wilson to B.J. Hinkle 143-36 S:6 #9
Feb. 1, 1916

"... have a chance to buy timber on lot 9 section 6 143-36. All Norway and white pine and will run about ten logs to the 1000, and good timber."

63. CORRESPONDENCE - Imm. Land Co.
 A. E. Pimley (distr. ranger) 143-36 S:17 N $\frac{1}{2}$ /SW
 to PTMC
 Dec. 15, 1916

"Slash and debris left on N $\frac{1}{2}$ /SW of section 17 to be disposed of at same time as cutting proceeds and as slash is made."

64. CORRESPONDENCE - Imm. Land Co.
 B. J. Hinkle to Connor & Wilson 143-36 S:7 Entire Section
 Feb. 3, 1917 S:17 Entire Section
 S:19 Entire Section
 S:20 E $\frac{1}{2}$ /NE, NE/SE
 S:29 NE $\frac{1}{2}$, N $\frac{1}{2}$ /NW, SE/NW
 N $\frac{1}{2}$ /SW, SE $\frac{1}{2}$

"... hope you are making a special effort to clean up sections 7, 17, 19, and 20 this season so there will be nothing left in that township except 29 for next season."

65. CORRESPONDENCE - Imm. Land Co.
 B. J. Hinkle to Connor & Wilson 143-36 S:19 #2
 Mar. 24, 1917 S:20 NE/NE, SE/NE

"... enclosing copies of affidavit ... includes certain lands which are assessed last spring as timber lands but from which the timber has now all been removed ... had considerable trouble getting officials of Clearwater County to change assessments from timber lands to cut over lands. What timber is left on section 19 is all on lot 2. Section 20, we believe all the timber was cut on the north forty (NE/NE). The forty on which the camp is located (SE/NE) has been erased from the affidavit."

66. CORRESPONDENCE - Imm. Land Co.
 Chapman to B. J. Hinkle 143-36 S:26 SE/NE, E $\frac{1}{2}$ /SW, SE $\frac{1}{2}$
 Dec. 10, 1918

Chapman reports trespassing by the Red River Lbr. Co. in section 26, six or seven years ago.

67. CORRESPONDENCE - Imm. Land Co.

B. J. Hinkle to W. Cox
Sept. 18, 1918

143-36 S:21 $W\frac{1}{2}/NE$, $N\frac{1}{2}/NW$, SE/NW ,
SE/SW, $W\frac{1}{2}/SE$, SE/SE
S:23 #1, 2, 3, $E\frac{1}{2}/SW$, SW/SE
S:25 $N\frac{1}{2}/NW$, SW/NW, $SE\frac{1}{2}$
S:27 SE/NE, $NW\frac{1}{2}$, $SW\frac{1}{2}$, $N\frac{1}{2}/SE$,
SE/SE
S:33 #1
S:35 $N\frac{1}{2}/NE$, $N\frac{1}{2}/NW$, SW/NW,
NE/SW, NE/SE

"Provided a satisfactory price can be agreed upon we will consent to sell the following timber for State Park purposes:

- Sec: 21 - all of the medium and small sized timber on the $E\frac{1}{2}$ of $SE\frac{1}{2}$ of $SE\frac{1}{2}$ and a sufficient amount of the timber 12" (dbh) and smaller on the remainder of the SE/SE and the $W\frac{1}{2}/SE$ as may be necessary to protect the view of the East Slope ... and on the remainder of our lands in said section only timber 8" (dbh) and smaller.
- Sec: 23 - all timber on lots 1, 2, and 3 and on the remainder of our lands in said section only 8" (dbh) or smaller.
- Sec: 25 - a few trees along the trail to Deer Park Lake on $N\frac{1}{2}/NW$ and SW/NW. All the medium sized and small timber on the East Slope of SE/SE and if necessary to protect the view of said Slope a small portion of the larger timber may be added, but the total amount shall not exceed 60% of the timber on said East Slope. On the remainder of our lands in said section only 8" (dbh) and smaller.
- Sec: 27 - Patches of large timber along Lind Trail through the $W\frac{1}{2}/W\frac{1}{2}$ and such medium sized and small timber as may be necessary to protect said large timber from heavy winds, said patches of large timber not to materially exceed 200 feet in width. On remainder 8" (dbh) or less.
- Sec: 33 - all timber on lot 1 except mature timber on the north-east portion of said lot.
- Sec: 35 - all the timber east of McKay Lake on NE/NE, also timber on NE/SE, the rest 8" (dbh) or less.

We will consent to sell patches of thrifty young timber not greater than 14" (dbh) on any of the sections above enumerated where same does not materially interfere with logging of our timber, patches to be mutually agreed upon."

68. CORRESPONDENCE - Imm. Land Co.
 B. J. Hinkle to Clapp 143-36 S:27 NW $\frac{1}{4}$, SW $\frac{1}{4}$
 Dec. 31, 1918

"(Cox) is determined to get 6 million feet regardless of how much choice timber he takes. The W $\frac{1}{2}$ of section 27 has no lakes and trails except that the Lind Trail slightly dips in on three forties on the west line ... but timber reserves is entirely away from the trail."

69. CORRESPONDENCE - Imm. Land Co.
 B. J. Hinkle to Clapp & 143-36 S:21 W $\frac{1}{2}$ /NE, N $\frac{1}{2}$ /NW, SE/NW,
 McCartney SE/SW, W $\frac{1}{2}$ /SE, SE/SE
 Feb. 12, 1919 S:23 E $\frac{1}{2}$ /SW, SW/SE

"Scale of timber cut on E $\frac{1}{2}$ /SW and SW/SE of section 23 is 6,485 logs, 708,170 feet. This is only those marked for cutting, other timber on these three forties are marked for the State. Underhill's estimate of State timber is 100,000 feet, also some large trees not marked either way.

For section 21, 17,980 logs, 1,819,280 feet. A large amount of timber originally marked for cutting on this section was left at (Cox's) request so (his) estimate may be different."

70. WARRANTY DEED
 Affidavit 143-36 S:31 S $\frac{1}{2}$ /SE, NW/SE
 W. T. Cox to the public
 Apr. 2, 1920

"All merchantable timber standing ... had been cut and removed therefrom prior to the year 1911."

71. WARRANTY DEED
 Northern Pacific Rwy. Co. to 143-36 S:29 SW/NW, SE/SW
 State
 Mar. 31, 1928
 80.00 acres
 \$400.00

72. CORRESPONDENCE - Div. of Forestry
 Misc. Papers 143-36 S:6 SE/SW, #7
 1928 S:8 SW/SE
 S:13 #8

Notes on private lands indicate that the owner was willing to sell for \$5.00 an acre but wanted \$8,000 to \$10,000 for one million board feet of timber on the 153.02 acres.

73. ABSTRACT OF TITLE

Senske, Homestead - 1895 142-36 S:6 #5

- to Nary, Feb. 17, 1904

\$200.00

- to Park Rapids Lbr. Co., Dec. 27, 1904

\$350.00

JUDGEMENT - Dissolution of Park Rapids Lbr. Co.

Auditor to Michelet, Tax Judgement Sale - May 11, 1908

Audubon State Bank to State, Feb. 10, 1930 \$101.25

74. RECORD OF DEEDS

Mar. 1, 1934

143-35 S:17 SW $\frac{1}{4}$ S:20 E $\frac{1}{2}$ /NW, E $\frac{1}{2}$ /SWS:29 E $\frac{1}{2}$ /NW, SW $\frac{1}{4}$ S:32 NW $\frac{1}{4}$, SW $\frac{1}{4}$

"Final Certification in the Matter of the Condemnation of
Certain Additional Lands for Itasca State Park."

75. QUIT CLAIM DEED

Menahga Lbr. Co. to State

143-36 S:31 #4

Mar. 5, 1936

\$1.00

This tract was acquired from Northern Pacific Rwy. Co.
on Feb. 5, 1936 for \$80.00.

APPENDIX B

List of Figures

<u>Figure</u>		<u>Page</u>
B1	The chronology of the Brainerd Lumber Company operations in the park.	B-5
B2	Location of the lumber mills in the park area and the major transportation routes.	B-9
B3	The chronology of the Red River Lumber Company operations in the park.	B-13
B4	The chronology of the Pine Tree Lumber Company operations in the park.	B-25
B5	Areas in the park logged by miscellaneous lumber companies.	B-28

List of Tables

<u>Table</u>		<u>Page</u>
BI	Summary of logging by the Brainerd Lumber Company in the park.	B-4
BII	Summary of logging by the Red River Lumber Company in the park.	B-12
BIII	Board feet cut during the selective logging operations in the winter of 1918-19.	B-23
BIV	Summary of the Pine Tree Lumber Company logging in the park.	B-24
BV	Summary of minor logging operations in the park.	B-29

I. BRAINERD LUMBER COMPANY

A. Introduction

The Brainerd Lumber Company, formerly the Northern Mills Company, was formed in 1893 (53). Beginning with the 1901-02 season, the Brainerd Lumber Company moved into the Itasca State Park and began logging the Pillsbury land. The Pillsburys had obtained much of their timber holdings from the R. G. Peters Salt & Lumber Company in 1890, and the remainder from speculators who had homesteaded small tracts. In later years, the Brainerd Lumber Company acquired timber from G. Cook who, in 1902, had homesteaded his acreage in the park's west annex.

In 1900, the Brainerd Lumber Company had offered to sell all or part of its timber within the park at reduced prices. Brower (8) reported that "an acceptance of that offer meant thousands of dollars saved to the park funds and no lumbering operations by that company at Itasca Lake". However, the offer was not accepted. The state did eventually acquire a large portion of the Brainerd Lumber Company's timber in 1902 and 1904 at higher prices.

B. Logging Policies

Very little is known about the cutting specifications of the Brainerd Lumber Company. It is possible that an eight-inch minimum log diameter was used, at least in the earlier logging in the park. There is no indication of what tree species other than white and Norway pine were cut.

All logging by the company in the park was conducted pre-

vious to legislation regulating burning of slash. If slash was burned, it would probably have been carried out in late spring.

C. "Itasca Park Contract" - 1901-06

Barnard and Gorder were contracted to set up the logging operations for the Brainerd Lumber Company in the park area (53). The logs were landed in the north and west arms of Lake Itasca. A logging dam had been constructed in 1902 at the outlet of the lake and the logs were driven down the Mississippi River (9). It was reported that some of the logs were driven to the mills in Minneapolis, a task requiring up to three years with up to a 60% loss (1).

In 1901, the Brainerd Lumber Company first entered the park and logged a few lots in the northeast corner. In the following seasons, the company moved toward the park's west annex where the majority of the logging activity was carried out. The logging of Cook's land by 1906 represented the last activity by this company within the park.

There are few descriptions available of the timber cut during this period. Ten million feet of logs were reported in Lake Itasca in the spring of 1904 although some of these logs may have come from outside the park (12). Brower's timber estimates indicate that the Pillsbury land contained some of the most heavily timbered lots within the original park, but most of these lands were purchased by the state prior to logging. Some of the cut-over forties in section 4 143-36 are described as very badly burned over with the pine being mostly

"pig iron Norway" (4), a very poor quality of merchantable pine. The only indication of the timber logged in the west annex is from notations made in the tax list of 1906 which describes briefly the Pillsbury property in section 6 142-36 as "not much timber". The results are shown in figure B1 and table B1.

TABLE B1

Summary of logging by the Brainerd Lumber Company in the park.

<u>Years</u>	<u>Acres</u>	<u>M Ft. Cut*</u>	<u>M Ft. Per Forty</u>
1901-02	84	555	264
1902-04			
Original Park	527	1,518	115
West Annex	1,296	?	?
1904-06	386	?	?
Total	1,938	?	?

* Based on Brower's estimates (7).

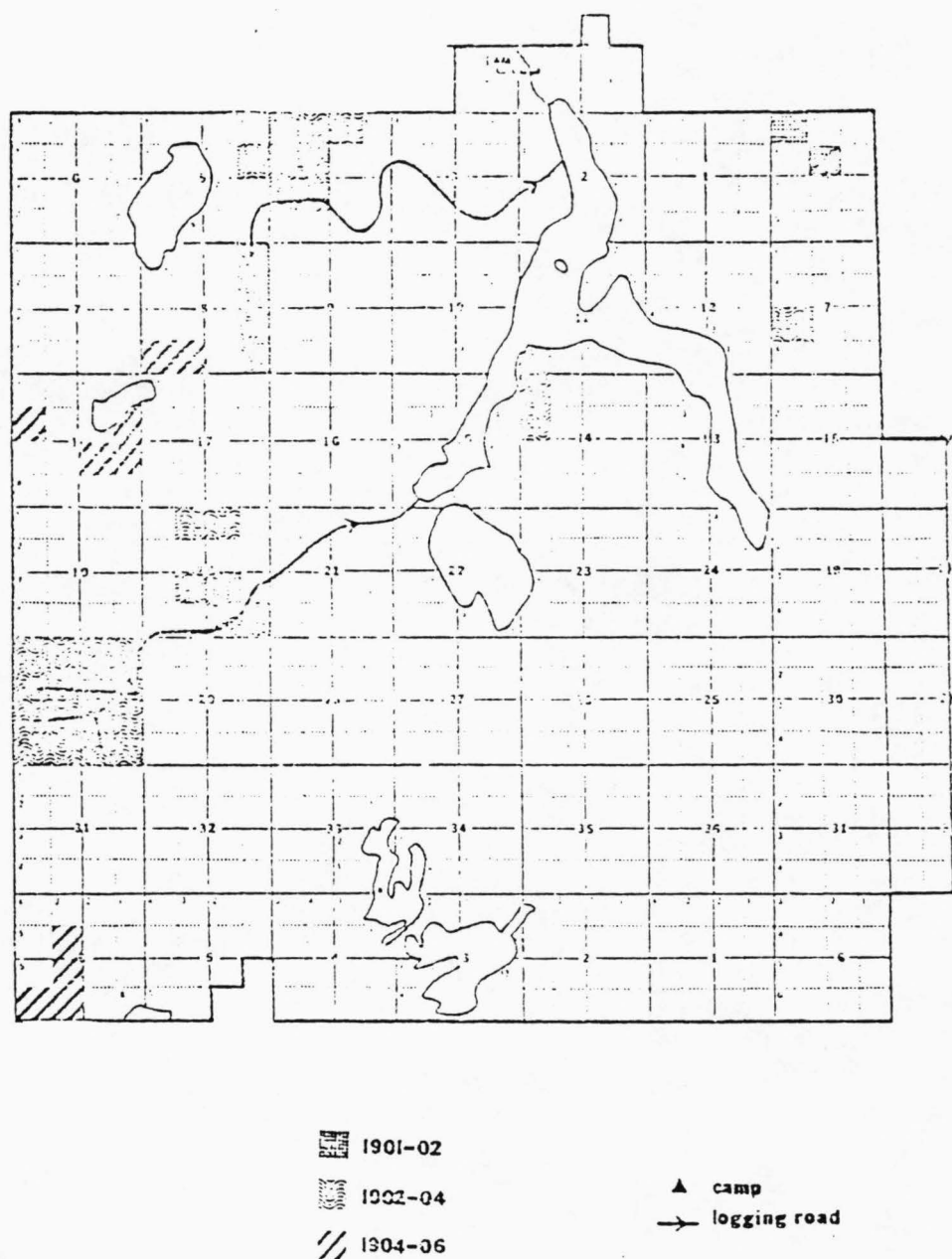


Figure B1. The chronology of the Brainerd Lumber Company operations in the park.

II. RED RIVER LUMBER COMPANY

A. Introduction

In 1892, T. B. Walker and H. C. Akeley formed a partnership for the purpose of handling and disposing of their vast timber holdings which included a portion of Itasca State Park (2). The Red River Lumber Company, which was created and owned by Walker, was contracted to handle most of their logging operations. Most of the timber to be logged within the park had been purchased by Walker from N. P. Clarke in 1888. In addition, Walker and Akeley obtained timber rights from the Shevlin-Carpenter Company and Beebe & Stone on the east side of the park.

B. Logging Policies

1. Cutting Specifications

Until 1905, the Red River Lumber Company reportedly cut only the best white and Norway pine having a minimum log diameter of eight inches. In the following years, spruce and jack pine were also included and the minimum diameter was reduced to six inches (48). A different policy may have been in effect within the original park from 1911 to 1914 as the State Forestry Board was "authorized to make an agreement giving Walker an additional \$1.00 per acre for land which had been cut over but timber less than ten inches d.b.h. was left untouched" (44). It is not known to what extent this agreement was carried out.

2. Slash Disposal

If slash was burned during the early years of logging in the park, late spring would be the most probable time for its occurrence. Not until 1909 were there regulations regarding slash disposal. The 1911-14 logging inside the original park was probably much more restricted, as the State Forestry Board kept close watch on logging operations. However, the Red River Lumber Company was not always cooperative, as indicated in the board's meeting minutes. "Red River Lumber Company had failed to burn in accordance with instructions and had to be done by the state at a cost of \$565.89" (46).

C. Logging Contracts

1. "Mississippi River Contract" - 1903-04

Brower's account of Walker's acquisition of a license to land their logs in Lake Itasca is the only information on the Red River Lumber Company operations in the north annex. The license allowed the company to haul "timber situated on sections 26 and 35 144-36 to Lake Itasca and deposit on the ice during the winter of 1903-04" (11).

2. "Itasca Park Contract"

Nearly all of the Walker and Akeley timber in the park, including the west annex, was cut under a contract dated May 15, 1905. This contract specified that the logs were to be cut and delivered by railroad to the mill in Akeley, within ten years (2). Robinson and Dick had been contracted to run the logging operations for the

company from at least 1911 to 1914 (36).

a. 1905-07

By the 1905-06 logging season, the Red River Lumber Company had moved south from Mallard along Long and Sucker Lakes and entered the north end of the west annex, setting up a camp at Squaw Lake (see figure B2). The Bemidji Daily Pioneer on August 28, 1906 reported that the Red River Lumber Company had 12 million feet in Squaw Lake but because of the lack of steel, the completion of the railroad which would remove the logs was delayed (51). It is difficult to determine how much of the 12 million feet of logs came from the park's west annex since timber estimates of the individual forties are unavailable. There are 560 acres just north of the park from which the timber was probably removed and subsequently landed in Squaw Lake. The remaining 1,122 acres in the west annex make up 67% of the total cut-over area from which timber would have been landed in Squaw Lake. This cut-over area in the park would have accounted for approximately eight million feet, for an average of 285 M feet per forty. This average is comparable to the Pine Tree Lumber Company's estimate of 250 M $\frac{1}{2}$ feet per forty for their land in the Squaw Lake area. However, it is possible that additional timber was cut during the following winter, 1906-07. This is supported by both

$\frac{1}{2}$ "M feet" indicates thousand board feet.

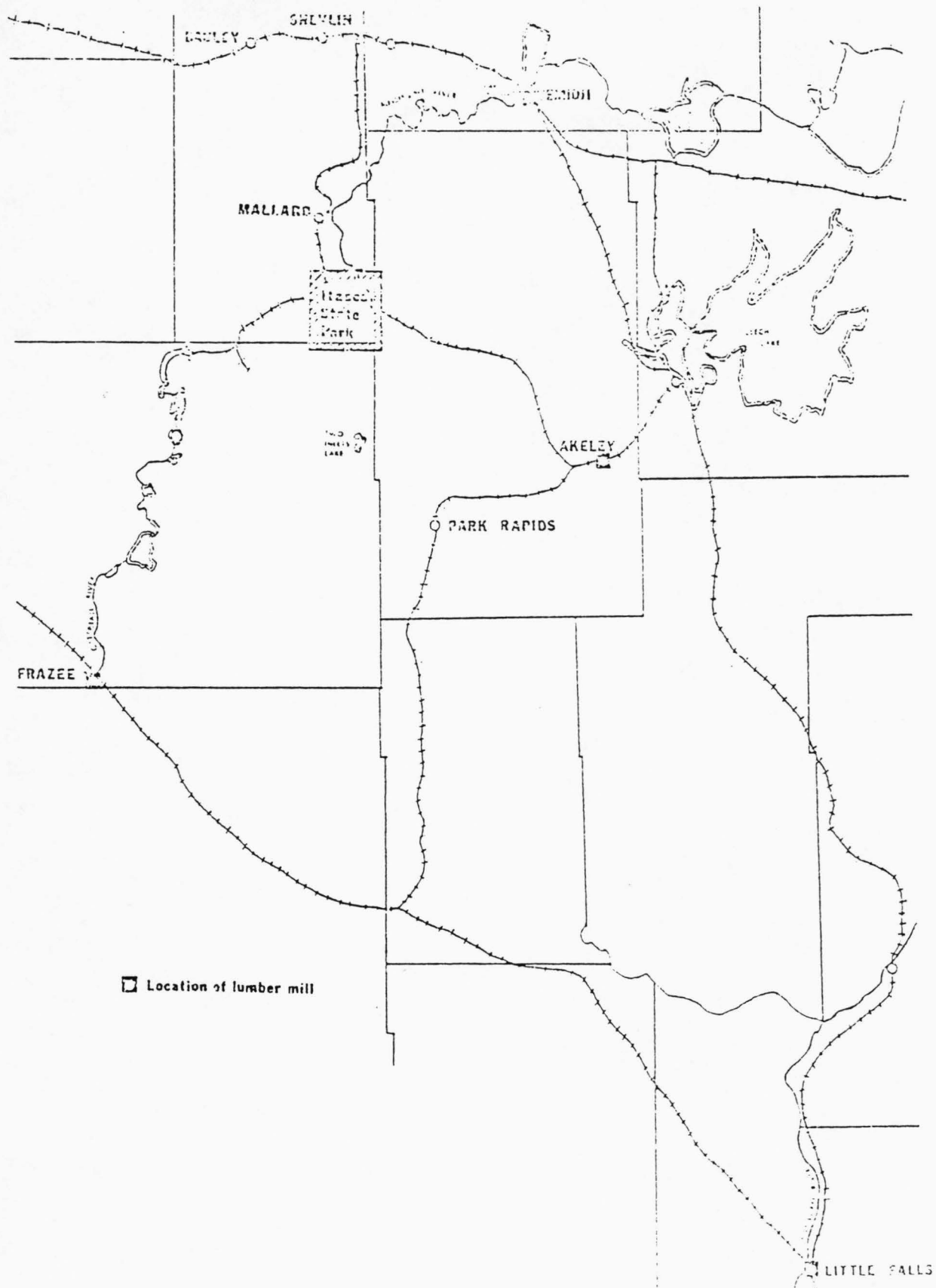


Figure B2. Location of the lumber mills in the park area and the major transportation routes.

Dobie (14) and the Clearwater County tax records which indicate that the Red River Lumber Company operated in the area from 1906-08. The only other description of the timber in this area is from an "old-timer's" account of the general logging of the Red River Lumber Company south of Mallard which claimed that the area was heavily timbered with up to 500 M feet per forty and eight logs per 1,000 feet (52).

b. 1911-14

The years in which the Red River Lumber Company logged timber in the east part of the park are difficult to pin down. The earliest indication of their logging in this area is from Dobie (15) who reported that they "had just finished building a logging railroad to the east side of the park and planned to log its timber during the next winter (1911-12) and haul it to Akeley by rail". Officials of the Pine Tree Lumber Company in December of 1918 reported timber trespassing by the Red River Lumber Company in section 27 "six or seven years ago" (35). This would indicate that the Red River Lumber Company logged their timber in section 26 in the winter of either 1911-12 or 1912-13. The last indication of their logging operations is from a timber deed obtained from Beebe & Stone (see #56; A-35) which was returned in the spring of 1914. This would indicate that the timber, which was located in the east annex, was cut

no later than the winter of 1913-14.

Much of the Red River Lumber Company timber in the east side of the park was purchased by the state, including 7,399 M feet of Norway and white pine and 200 M feet of jack pine (47). Estimates on the amount of timber logged in this area ranged from two and one-half million board feet, based on Brower's survey (7), to three million using Keegan and Walker's estimates (10). Both surveys were made at least ten years before the actual logging took place. According to Brower's estimates, most of the cut timber (72%) came from section 26 143-36 which was well-timbered and averaged 238 M feet per forty. The remaining timber cut came from sections 7 and 18 143-35 which were poorly timbered, averaging less than 100 M feet per forty. Brower (3) describes this area as having been overrun by several fires which had left the area "almost a burned barren" with "quantities of dead and down timber and brush". He estimates that "the last destructive fire [had nearly] depleted the forest ... to an extent equaling one-half of the value of the standing timber". No information was found concerning the total amount of timber cut in the east annex of the park. The results are summarized in figure B3 and table BII.

TABLE BII

Summary of logging by the Red River Lumber Company
in the park

<u>Years</u>	<u>Acres</u> <u>Cut</u>	<u>M Bd. Ft.</u> <u>Cut</u>	<u>M Bd. Ft.</u> <u>Per Forty</u>
1903-04	40	?	?
1905-07	1,230	~ 8,000#	~ 260
1911-14	981	2,538*	104
<hr/>			
Total	2,251	> 10,000	

Vandersluis (51)

* Brower (7)

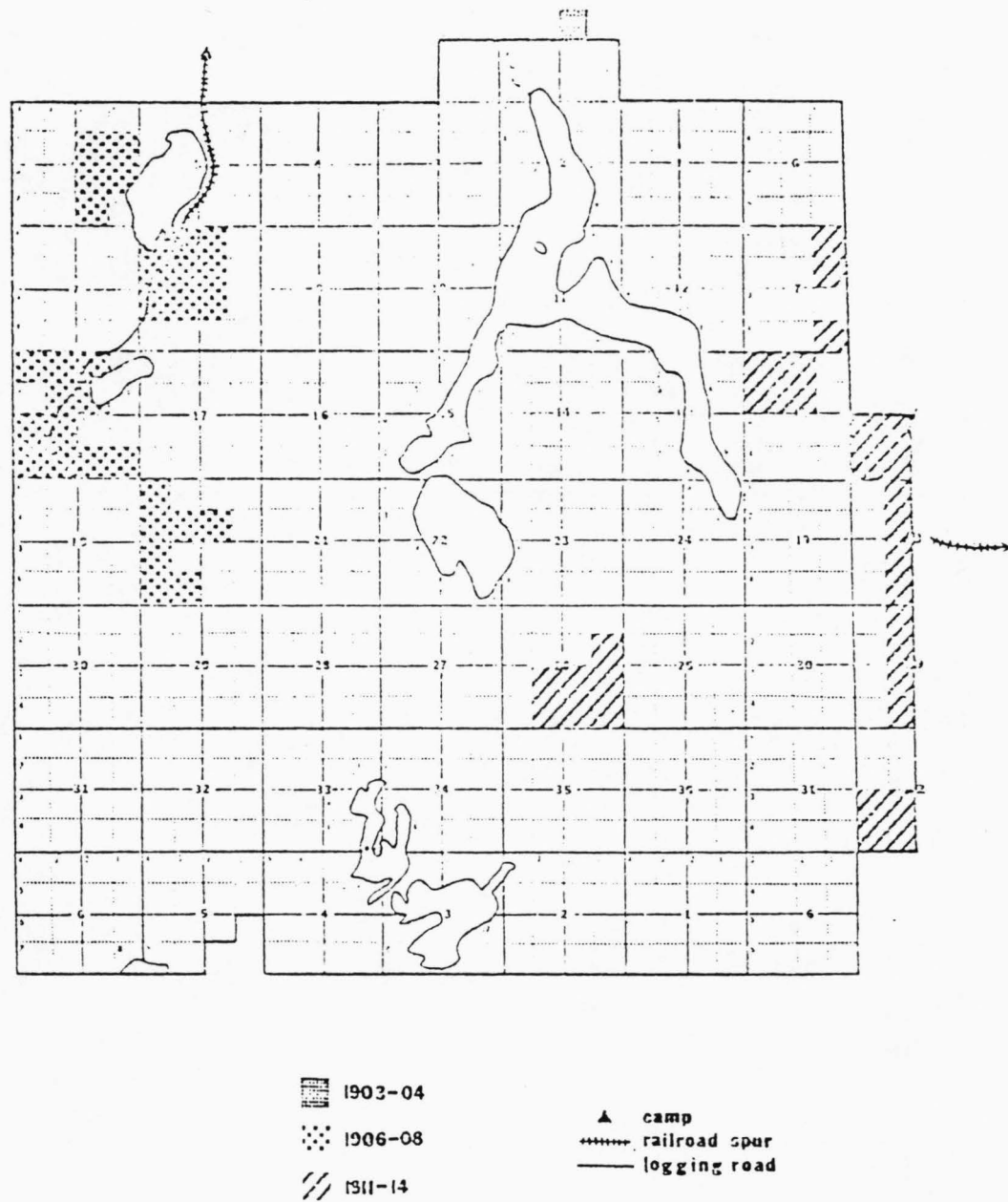


Figure B3. The chronology of the Red River Lumber Company operations in the park.

III. PINE TREE LUMBER COMPANY

A. Introduction

The Pine Tree Lumber Company, Pine Tree Manufacturing Company, and the Immigration Land Company were all associated with a Weyerhaeuser venture into the remaining pinelands of central Minnesota. Beginning in June of 1890, the Little Falls-based corporation purchased 212,772 widely scattered acres of pinelands for \$452,330 from the Northern Pacific Railway Company (17). This land had been part of a federal land grant giving the railway company alternate sections forty miles either side of a proposed route to the Pacific Coast. In Itasca State Park, this grant included all odd-numbered sections within the northern limit which passed through the center of the park, northwest to southeast. Only the choicest pine stands within this land grant were selected.

The timber, as a whole, was considered mediocre and averaged only 54 M feet per forty compared to 1,000 M feet in previous holdings in Wisconsin (41). The large difference was due to the fact that the Pine Tree Lumber Company timber, besides being much more scattered, also included a large percentage of Norway pine which had not been included in the original estimates. With the growing scarcity of white pine, Norway pine was included in the 1897 timber survey which revised the stumpage estimate to 144 M feet per forty for a total of 604,789 M feet (41). These estimates are generalized totals for a large area and it is not known how representative they are of the park. Descriptions of the Pine Tree

Manufacturing Company's land in the park varied from poorly timbered to having "some of the best timber ever to reach Little Falls" (16).

B. Logging Policies

When the Pine Tree Lumber Company first entered the park in 1912, most of the pine forests in Minnesota had been depleted and logging practices had already been modified to make better use of the existing forests. Additional modifications of company policies were sometimes required by the State Forestry Board during logging within the original park.

1. Cutting Specifications

The Pine Tree Lumber Company had previously reduced the minimum log diameter from eight inches to six inches in 1897 (41). White pine, Norway pine, spruce, and jack pine were the most sought after species, although tamarack and balsam fir were reportedly also logged. Over all, Norway and white pine accounted for 85% to 100% of the annual board feet cut.

Under an act of 1909, the Pine Tree Lumber Company donated 3,330 acres in the original park to the state in lieu of taxes. On these lands the company had the right to cut white pine, Norway pine, jack pine, spruce, tamarack, cedar, and balsam fir that were greater than eight inches d.b.h. until 1919. This varied little from the normal logging practices, since trees with less than an eight-inch d.b.h. rarely made a six-inch log diameter (19). However, the state was allowed to purchase selected trees

or stands. From company records it appears that only Norway pine, white pine, jack pine, and spruce were cut in the original park as tamarack, cedar, and balsam fir were donated to the state (38).

2. Slash Disposal

The legislation of 1909, requiring slash to be burned by May 1, had been passed prior to any Pine Tree Lumber Company logging in the park. Instructions sent to the camp foremen, however, indicate that extra steps were to be taken in regard to slash disposal within the original park. During the first season of logging in the park in 1912, a memo sent to the camp indicated that "special precautions /must be taken/ in burning brush not to injure green trees. As a result it may be necessary to pile brush differently" (19). The following year, prior to logging in the park's west annex, the legislation of 1913 was passed. The following message sent by the Pine Tree Manufacturing Company to the camps explained the new regulations regarding slash disposal.

The Forestry Department states that all brush must be piled in good shape and must be burned during the winter as operations progress. They claim that where brush is burned late in the spring it kills a large quantity of other timber on the lands and they wish to avoid this. We desire that you take particular pains in regard to piling of brush and burning. This applies to all our lands (23).

An additional notice from the Pine Tree Manufacturing Company requested that slash be hauled away from lakes so that timber near shorelines would not be killed (22). This may have been in consideration of aesthetics for

future sale of the cut-over lands but it is not known if this practice was in effect in the park area.

C. Logging Contracts

1. "Two Inlet Lake Contract"

Connor and Wilson were contracted to log much of the Pine Tree Manufacturing Company timber and operated several camps for this purpose each logging season. Their initial logging within the park was under a contract whereby Connor and Wilson were to cut the Pine Tree Manufacturing Company timber scattered throughout townships 142-36, 142-35 and 143-35 and land the logs in Two Inlet Lake (23). From there the logs were to be hauled to Park Rapids where they could be shipped to Little Falls by railroad (see figure B2).

a. 1912-13

During the 1912-13 logging season the Pine Tree Lumber Company set up camp in the park area and began logging in section 31 143-36 and section 1 142-36 in the southeast corner of the park. Just as logging operations had begun, the state selected groves of pine surrounding Arko, Josephine, and part of Desoto Lakes (45). The timber purchased totaled 800 M feet and included most of the pine on these tracts.

Except for the stands purchased around the lakes, the Pine Tree Manufacturing Company timber in this area was poor in both quality and quantity. Brower (5) estimated an average of only 103 M feet per forty

and described both sections as "badly burned over". He also reported that in section 1, "the timber as a whole is very poor quality", being mostly "pig iron Norway". Nearly nine million feet were logged that season although it is not known how much came from the park (20).

b. 1913-15

During the winters of 1913-14 and 1914-15 the Pine Tree Lumber Company moved westward and logged in the south end of the west annex. In addition to company land, scattered tracts under private ownership were logged when timber rights could be obtained.

There are few indications of the amount of timber cut on these lands. Notations in the 1904 tax list describe the Pine Tree Manufacturing Company property in sections 5 and 6 142-36 as "heavy timber and fair land". Section 31 was estimated by timber cruisers to have had 2,195 M feet or 200 M feet per forty (21). No information is available regarding the total amount logged during these two seasons, but using the average of 200 M feet per forty, approximately seven million feet would have come from the west annex.

2. "Lake Itasca Contract"

The remaining timber to be cut in the west annex, estimated at 20 to 22 million feet, was to be taken out by way of Lake Itasca and the Mississippi River (21). A dispute with Connor and Wilson over the stumpage prices nearly

resulted in the selling of this timber to the Nichols & Chisholm Lumber Company, a group logging just west of the park who desired the timber for their mill in Frazee. However, Connor and Wilson finally settled with the company's terms after they were convinced that the tracts to be logged were heavily timbered and would result in a much more profitable logging season compared to the previous year. The new contract called for seven million feet of logs per season to be delivered over a three-year period (21). A steam hauler was used to haul the logs which were landed in Lake Itasca and along the Mississippi River. The logs were then driven 120 miles down river to Lake Irving near Bemidji and from there transported to Little Falls by railway (16).

a. 1915-17

Two logging camps were used during the winters of 1915-16 and 1916-17. Camp #2, located on Squaw Lake, utilized the Red River Lumber Company's old railroad grade to haul their logs to the Mississippi River. Camp #4 was located in section 20 and their logs were hauled to the west arm of Lake Itasca. Camp #4 was expected to land one to two million feet more than the Squaw Lake camp (29).

Approximately 17 million feet of logs were cut during these two years, averaging close to 275 M feet per forty (26). This is similar to the 280 M feet average for the Red River Lumber Company timber in

this same area, and represents very good timber compared to the previous seasons. The great extent of these pine stands is also indicated by comments made during the contract dispute with Connor and Wilson.

[At this time,] there is [sic] between 10 and 12 million [feet] on two sections alone [313-395 M feet per forty] ... you won't have to go over as much ground to log the entire lot as you had to go over the last winter at camp #1 for 4-1/2 million (24).

b. 1917-18

During the 1917-18 logging season, the Pine Tree Lumber Company finished logging their remaining timber in the west annex. The logging done at this time included most of section 29 as well as one forty in section 19 left over from the previous season which was cut short due to an early thaw (31,32).

Like other lands logged under the Itasca Lake contract, section 29 was heavily timbered. The original estimate was four million feet, or 250 M feet per forty, but the actual cut exceeded this by one and one-half million (33).

3. "Elk Lake Contract" - 1918-19

With the purchase of 4,250 M feet of timber west of Lake Itasca by the state, the Pine Tree Lumber Company had only 1,656 timbered acres remaining in the original park. This land had been involved in a court battle for a number of years with the state contesting the ownership. After a decision in favor of the Pine Tree Manufacturing Company, the Pine Tree Lumber Company planned to finish

logging these lands during the winter of 1918-19 (27).

The Pine Tree Lumber Company had offered the entire 14 million feet of timber including 13 million feet of Norway and white pine for \$135,000 (28). The offer was refused, however, apparently because the state believed that the estimate was too high. Also, there was a general feeling that only timber in scenic areas, such as around lakes and trails, was needed for park purposes (13). An agreement was worked out with the state which, in effect, allowed selective logging of these lands. Summarized by the Pine Tree Lumber Company, the contract permitted the state to purchase from them:

- 1) all timber on the NE/NE and NE/SE of section 35 and lots 1, 2, and 3 of section 23.
- 2) all medium and small timber and a sprinkling of large timber on the SE/SE of section 21 and the SE/SE of section 25, the timber being around lakes.
- 3) a few of the large trees in addition to the small timber along the Lind Saddle Trail on the W $\frac{1}{2}$ /NW and W $\frac{1}{2}$ /SW of section 27.
- 4) on remainder of lands ... only the thrifty and growing small timber or medium sized timber less than 14" d.b.h. (34).

The total timber purchased by the state was not to exceed six million feet. In addition, all timber eight inches or less was donated to the state. In exchange, the state was to give the Pine Tree Lumber Company "ripe" or dead and down timber (see appendix C on salvage logging) on surrounding specified areas. The logs were to be landed in Elk Lake and driven through Lake Itasca and down the Mississippi River to Lake Irving.

Originally, the State Forestry Board indicated that it would purchase only two and one-half million feet, leaving about 11 to 14 million for the Pine Tree Lumber Company to log. However, state forester William Cox decided to take advantage of the clauses allowing for the purchase of any timber under 14 inches d.b.h. and marked an additional two and one-half million feet. The Pine Tree Lumber Company's dissatisfaction with Cox's marking of the timber resulted in an intense dispute between the two. Company papers provide the following comments.

Cox had ignored every promise that he has made as to the marking of the timber and is selecting some of the largest and choicest timber for the state to purchase in locations where he was only to take the small thrifty timber (37).

He [Cox] is marking most of the jack pine to be cut by us regardless of how it is mixed with the timber. It will cost as much to get out as the timber is worth (34).

It is impractical to log a few defective trees a half mile from the logging road ... (39).

These statements appear to indicate that the original guidelines were not strictly carried out by the state.

Timber on the Pine Tree Lumber Company lands was reported to have had "some of the largest and finest logs ever to reach Little Falls" (16). Some logs measured up to 36 inches in diameter and contained one thousand board feet. The original Pine Tree Lumber Company estimates included 16 million feet of pine or over 386 M feet per forty (28). A later survey estimated 14 million feet or 33.5 M feet per forty, which is still exceptionally high (25).

The difference in estimates was due partly to the 1917 fire which resulted in a loss of 500 M feet in section 35 (40).

The final tally of the logging season was eight million feet of logs with an additional 1,332,120 feet of dead and down timber (47). By using the Pine Tree Lumber Company timber estimates before logging (25), which were grouped by sections, and subtracting the state's estimate of the amount of timber purchased, an approximation can be made of the amount of timber cut on each section (see table BIII).

TABLE BIII

Board feet cut during the selective logging operations
in the winter of 1918-19.

	M Feet Cut				Total
	<u>Norway Pine</u>	<u>White Pine</u>	<u>Jack Pine</u>	<u>Spruce</u>	
<u>143-36</u>					
S:21 (360 acres)	1527 (61%) ^{1/}	188 (58%)	66 (40%)	42 (42%)	1823 (59%)
S:23 (120 acres)	508 (91%)	172 (86%)	6 (17%)		686 (86%)
S:25 (280 acres)	724 (42%)	117 (25%)	0 (0%)	0 (0%)	841 (38%)
S:27 (480 acres)	3055 (79%)	761 (82%)	17 (21%)	43 (25%)	3876 (76%)
S:33 (35 acres)	70 (39%)	26 (58%)	15 (30%)	10 (67%)	121 (42%)
S:35 (280 acres)	1323 (63%)	78 (47%)	0 (0%)	0 (0%)	1401 (59%)
Total (1656 acres)	7065 (64%)	1296 (60%)	199 (24%)		8748 (63%)

^{1/} Indicates the percentage of the pre-logging board feet estimate that was cut.

Since the state estimates were an underestimation of the amount of timber by Pine Tree Lumber Company standards, the calculated amount of timber cut would be high. This would account for table IV showing about 750 M board feet cut higher than what was actually cut.

Summing up this final large-scale timber operation in the park the State Forestry Board stated:

The timber retained was so selected by the State Forester and his assistants by marking all trees described by the state, that the logging of about 8 million feet of timber was done without materially affecting the aesthetic value of the park (42).

The results are summarized in figure B4 and table BIV.

TABLE BIV

Summary of the Pine Tree Lumber Company logging in the park.

<u>Years</u>	<u>Acres</u>		<u>Total M Ft. Cut^{1/}</u>	<u>Average M/Forty</u>
	<u>Cut Over</u>	<u>Partially Cut</u>		
1912-13	542	141	2-4,000	~ 200
1913-15	1,498	0	~ 7,000	~ 180
Squaw Lake Camp	?	0	6-7,000	?
Lake Itasca Camp	?	0	9,000	?
1915-17	2,414	0	15-16,000	~ 250
1917-18	556	0	5,497	350
1918-19	0	1,440	8,000	370 ^{2/}
Total	5,010	1,581	38-40,000	312

^{1/} Based on company records.

^{2/} Includes timber not cut.

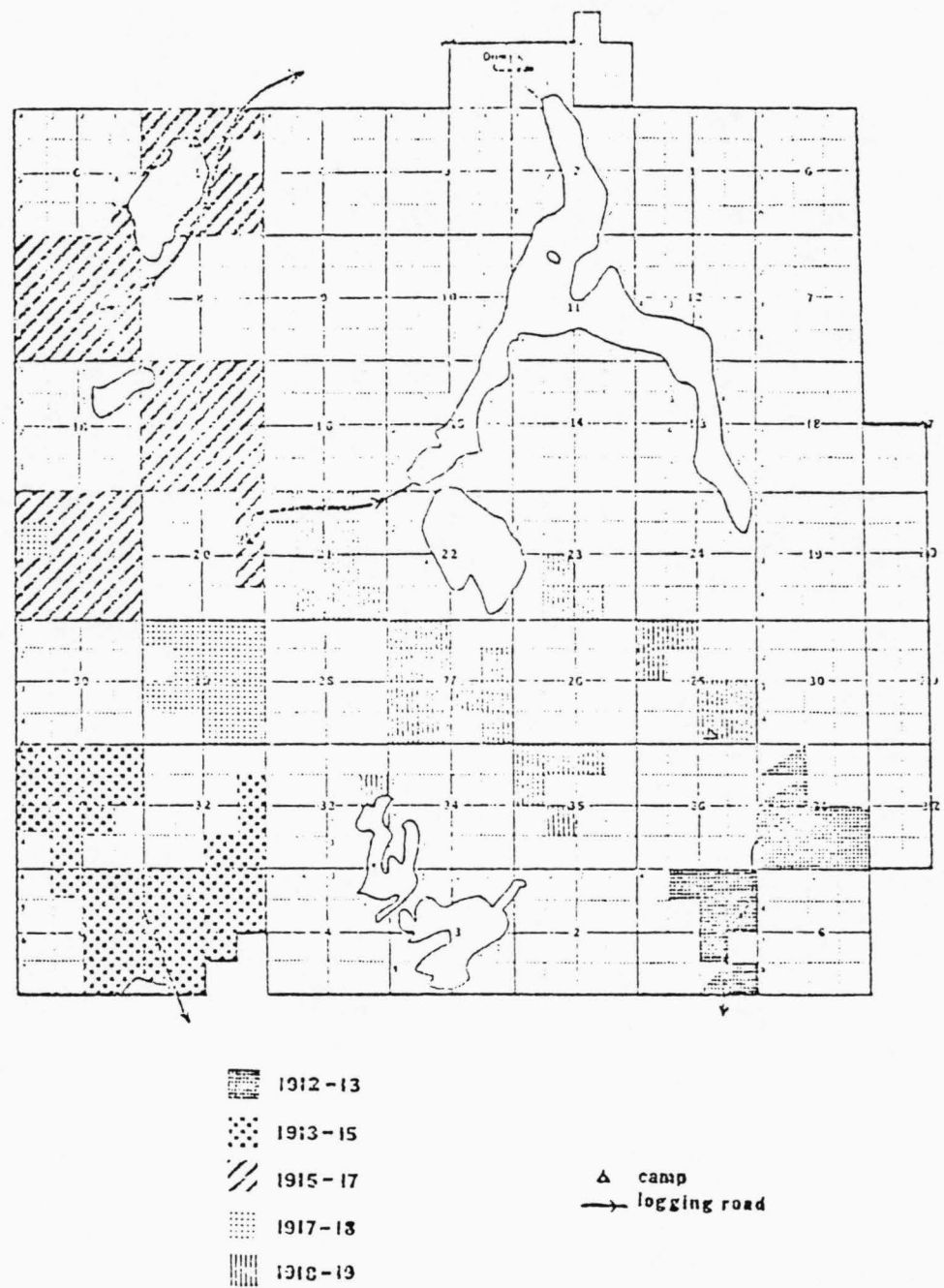


Figure 34. The chronology of the Pine Tree Lumber Company operations in the park.

IV. OTHER LUMBER COMPANIES

The Brainerd Lumber Company, Red River Lumber Company, and Pine Tree Lumber Company accounted for 85% of the area logged in Itasca State Park. At least five other lumber companies also operated in the park although information on their activities is sketchy or nonexistent. Areas cut by these companies are shown in figure B5 and summarized in table BV.

A. H. C. Akeley Lumber Company

Although owned by H. C. Akeley, the company logged timber on both Akeley and Walker lands (49). No other information concerning the company's activities is known except that it operated in the southwest corner of the park during the winter of 1901-02 (43). It is possible that portions of the east annex, which are assumed to have been logged by the Red River Lumber Company, could have been logged by the H. C. Akeley Company.

B. F. W. Bonness & Company

The F. W. Bonness & Co. was a small logging outfit which was contracted to salvage down timber in the park during the winter of 1901-02 (see appendix C on salvage logging). However, the company illegally cut over one lot and part of another, just east of the east arm of Lake Itasca (9).

C. Grand Forks Lumber Company

The Grand Forks Lumber Company operations were predominately north of the park. However, they logged two lots in the northeast corner of the park during the winter of 1902-03. Logs from lot 2 of section 6 143-35 were reported to have been

landed in the Upper LaSalle Lake. Those from lot 3 of section 7 were landed in Lake Itasca, possibly for Pillsbury, who had acquired the timber rights (43). A timber deed specified cutting to a six-inch minimum log diameter.

D. Crookston Lumber Company

During the winter of 1903-04 the Crookston Lumber Company logged most of the north annex. The logs were landed in Lake Itasca and then driven down the Mississippi River (6).

E. Nichols & Chisholm Lumber Company

The Nichols & Chisholm Lumber Company approached the park from the west, logging extensive pinelands owned by H. C. Clarke and T. Shevlin. By 1918, the company had a railroad spur extended to the park's west boundary and was completing the final major logging operations in the park area. Although Clarke and Shevlin had previously sold their pinelands within the park to Akeley, they acquired timber rights from at least one private owner in the west annex. The timber was cut during the winter of 1918-19 and hauled by railroad to a chain of lakes where they were eventually driven down the Ottertail River to the mill in Frazee (18, 50).

There are also several individuals who acquired timber rights with the park, but it is not known with what lumber company they were associated.

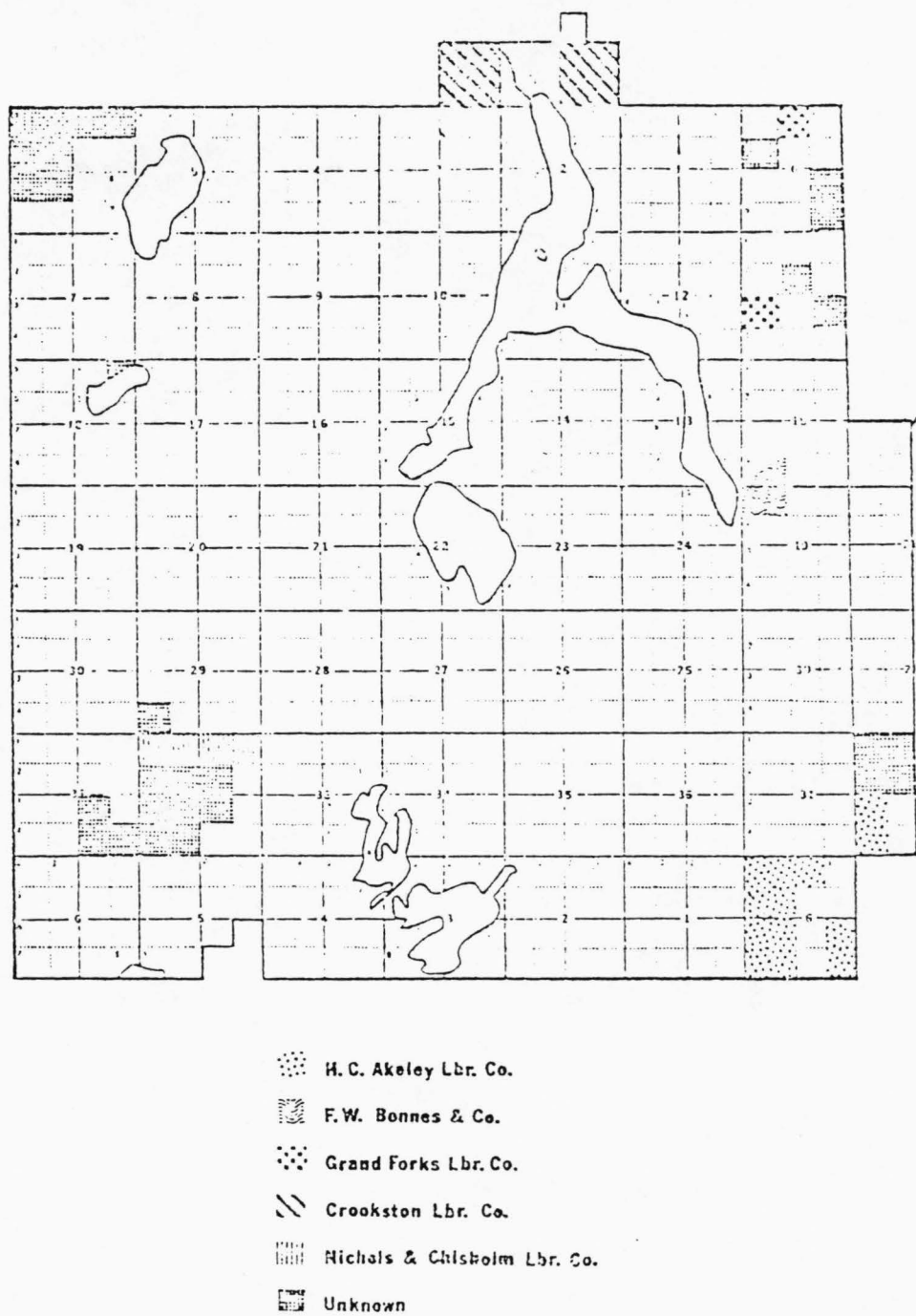


Figure B5. Areas in the park logged by miscellaneous lumber companies.

TABLE BV

Summary of minor logging operations in the park.

<u>Lumber Company</u>	<u>Years</u>	<u>Acreage Logged</u>		<u>Total^{1/} M Ft. Cut</u>
		<u>Cut Over</u>	<u>Partially Cut</u>	
H. C. Akeley	1901-02	305	0	355
F. W. Bonness	1901-02	49	49	70-130
Grand Forks	1902-03	87	0	283
Crookston	1903-04	320	0	?
Nichols & Chisholm	1918-19	160	0	?
Unknown	---	1,035	0	?
Total		1,956	49	?

^{1/}Based on Brower's survey (7).

REFERENCES CITED - APPENDIX B

1. Anderson, R. 1937. Historical narrative - Itasca State Park, Minnesota. Unpublished. National Park Service. p. 64.
2. Beltrami County. Court Records, 15th Judicial District. File No. 6736, T. B. Walker vs F. Quirk, June 23, 1914.
3. Brower, J. V. 1900. Itasca State Park timber examinations. Unpublished. State Archives, St. Paul, Minn. pp. 25-28, 30-33.
4. Ibid., p. 55.
5. Ibid., pp. 171, 213-15.
6. Ibid., pp. 227-228.
7. Ibid., pp. 264-265.
8. Brower, J. V. 1904. Itasca State Park, an illustrated history. Minn. Hist. Soc. Coll. Vol. XI. Minn. Hist. Soc., St. Paul, Minn. p. 187.
9. Ibid., p. 198.
10. Ibid., p. 220.
11. Ibid., p. 227.
12. Ibid., p. 229.
13. Cheyney, E. G. n.d. (probably 1903-1907). Management plan for Itasca State Park. Unpublished. School For. Univ. Minnesota. p. 2.
14. Dobie, J. 1959. The Itasca story. Ross and Haines, Minneapolis, Minn. p. 126.
15. Ibid., p. 127.
16. Ibid., p. 130.
17. Hidy, R. W., E. Hill, and A. Nevins. 1963. Timber and men, the Weyerhaeuser story. MacMillan Company, New York. p. 106.
18. Holzkamm, T. E. 196 . The Nichols-Chisholm Lumber Company in Minnesota. Unpublished. Pamphlet No. 399. Clearwater County Hist. Soc., Bagley, Minn. p. 18.
19. Immigration Land Company. 1910-1919. Company papers. Minn. Hist. Soc., St. Paul, Minn. B. J. Hinkle to Connor & Wilson, Oct. 10, 1912.

20. Ibid., Connor & Wilson to B. J. Hinkle, Feb. 22, 1913.
21. Ibid., B. J. Hinkle to Connor & Wilson, Feb. 12, 1914.
22. Ibid., Memo. Sept. 1914.
23. Ibid., B. J. Hinkle to Connor & Wilson, Dec. 15, 1914.
24. Ibid., B. J. Hinkle to Connor & Wilson, Sept. 9, 1915.
25. Ibid., C. A. Weyerhaeuser to R. D. Musser, Oct. 5, 1915.
26. Ibid., B. J. Hinkle to W. Cox, Apr. 21, 1916.
27. Ibid., F. Weyerhaeuser to C. A. Weyerhaeuser, July 21, 1916.
28. Ibid., B. J. Hinkle to Clapp, July 24, 1916.
29. Ibid., B. J. Hinkle to Connor & Wilson, Nov. 8, 1916.
30. Ibid., B. J. Hinkle to W. A. Weyerhaeuser, Mar. 13, 1917.
31. Ibid., B. J. Hinkle to Connor & Wilson, Mar. 20, 1917.
32. Ibid., B. J. Hinkle to Connor & Wilson, Mar. 24, 1917.
33. Ibid., B. J. Hinkle to C. A. Weyerhaeuser, Mar. 21, 1918.
34. Ibid., B. J. Hinkle to Clapp, Nov. 25, 1918.
35. Ibid., B. J. Hinkle to Chapman, Dec. 10, 1918.
36. Ibid., B. J. Hinkle to Chapman, Dec. 16, 1918.
37. Ibid., B. J. Hinkle to Clapp, Dec. 30, 1918.
38. Ibid., B. J. Hinkle to Underhill, Feb. 4, 1919.
39. Ibid., B. J. Hinkle to Clapp, Feb. 18, 1919.
40. Ibid., B. J. Hinkle to W. Cox, Sept. 18, 1918.
41. Kolhmeyer, F. W. 1972. Timber roots - the Laird, Norton story, 1855-1905. Winona County Historical Society, Inc., Winona, Minn. p. 273.
42. Minnesota State Forestry Board. 1919. Annual report of the Minnesota State Forestry Board. p. 13.
43. State Auditor. 1903. Correspondence. T. G. Fitzgerald to T. G. Iverson, Mar. 25 & 27, 1903. (includes map).
44. State Forestry Board. 1911-1913. Minutes of meetings. State Archives, St. Paul, Minn. June 22, 1911.

45. Ibid., Apr. 3, 1913.
46. Ibid., Oct. 21, 1913.
47. Ibid., June 23, 1919.
48. Univ. Minn. Agric. Exp. Sta. and Minn. Dept. Conserv. 1935.
Land Survey of Hubbard County, Minnesota. Farm Campus,
St. Paul, Minn. p. 25.
49. Vandersluis, C. 1974. Mainly logging. Minneota Clinic,
Minneota, Minn. p. 186b.
50. Ibid., p. 302h.
51. Ibid., p. 305a-b.
52. Wright, E. W. n.d. Transcript of tape recording. Clearwater
County Hist. Soc., Bagely, Minn.
53. Zaffe, C. 1946. Brainerd, Minnesota 1871-1946. Colwell Press,
Inc. Minneapolis, Minn. p. 64.

APPENDIX C

List of TablesTablePage

CI

Summary of salvage logging in the park
from 1901 to 1921.

C-5

SALVAGE LOGGING

Although the salvage logging operations had a relatively minor impact on the forests, a summary of the salvage operations during the major logging operations is included to complete the logging history of the park during this period.

The definition of salvage logging varied during the park's early history. Although the timber cut during salvage operations was commonly referred to as "dead and down", this description was not always accurate. The first few years of salvage logging were for the purpose of removing windthrows caused by a severe storm in 1900. During the first season of salvage logging in 1901-02, "down timber" was sold to F. W. Bonness & Company. The contract specified that no standing contract was to be cut. However, the company was convicted twice for illegal cutting of "green timber". The next winter a similar contract allowed the cutting of down white pine, Norway pine, and spruce (2). In the following years, various amounts of timber were logged that included both dead and down trees. Much of this salvaged timber had been killed by forest fires that had occurred in 1894, 1899, and 1905. Similar operations may have followed fires in 1911, 1913, and 1917 (3). In 1907, legislation was passed that expanded the meaning of salvageable timber to include "dying" timber. The law specified that:

The State Forestry Board shall preserve intact the primeval pine forest now growing in Itasca State Park, and shall cut no part thereof except weak, diseased or insect infested trees, or dead and down timber (4).

The Pine Tree Lumber Company records provide an eyewitness account of the logging of approximately 350 M feet of dead, down, and dying timber during the winter of 1917-18.

[They are] cutting mostly green timber [.] They [the state] have what they call a tree Doctor [who] goes around and marks the trees which he think[s] that is [sic] going to dye [sic] so the green [timber] is good[,] so is the ded [sic] and down (5).

There were only three winters in which one million or more feet of timber were salvaged (see table CI). Two of these seasons, 1918-19 and 1920-21, occurred during the close of the major logging operations in the park. In 1918 the Pine Tree Lumber Company informed the state:

[since] there will be no driving out of Itasca Lake after our logs are taken out the state may never have as good an opportunity to dispose of its ripe timber (6).

The state was willing to allow salvage cutting over a large area since dead and dying timber was considered a fire hazard and also unaesthetic. Also, in consideration for allowing salvage operations, the company was willing to allow the state the right to purchase up to five million feet of standing timber.

Following the salvage logging in 1918-19, the State Forestry Board stated that "there still remains much dead tamarack and other dead and down timber which should be sold if a purchaser can be obtained" (7). As a result, another million board feet of timber was salvaged during the winter of 1920-21.

Overall, the timber cut during the salvage operations was reported by Anderson (1) to have included 35% "green timber". The green timber includes timber cut illegally and trees that were weak, diseased, and insect-infested.

A summary of the salvage operations in the park from 1901 to 1921 is shown in table CI. The information was obtained from State Forestry Board records, Pine Tree Lumber Company records, Brower's

The Itasca Park - an illustrated history, and the State Auditor Biennial Reports. Board-foot figures in parentheses are estimates calculated from the sales value of the timber. Information on salvage logging in later years is available from Hansen et al. (7).

TABLE CI

Summary of salvage logging in the park from 1901 to 1921

<u>Years</u>	<u>Lumber Company</u>	<u>Location of Cutting</u>	<u>M Ft. Cut</u>	<u>Remarks</u>
1901-02	F.W. Bonness & Co.	143-36 S:35,36	800	Windfalls
1902-03	F.W. Bonness & Co.	143-36 S:1 #3,4 S:12 W $\frac{1}{2}$ /NW S:13 #1,4,5	97	Windfalls
1903-04	Brainerd Lbr. Co.	?	193	
1905-06	State		72	
1907-08	L. Amadon & Co.	School land Other	(150-200) ^{1/} (200-300)	
1909-10	Douglas Lbr. Co.	?	1,000	
1909-10	State	School land	(60-85)	
1911-12	Red River Lbr. Co.	143-35 S:33,34	?	
1913-14	Pine Tree Lbr. Co.	143-36 S:33,34	20	
1915-16	Pine Tree Lbr. Co.	?	55	"All but 10 M ft. fire killed"
1916-17	Pine Tree Lbr. Co.	Near Elk Lake and west arm of Lake Itasca	(300)	
1917-18	Pine Tree Lbr. Co.	Near Elk Lake and west arm of Lake Itasca	(350)	
1918-19	Pine Tree Lbr. Co.	143-36 S:21 E $\frac{1}{2}$ /NE,NE/SE,NE/SW 22 NE/SW,SE/NW 26 W $\frac{1}{2}$ /SW 27 NE/NE,W $\frac{1}{2}$ /NE,SW/SE 28 NE/NE,W $\frac{1}{2}$ /SE 33 NE/NE,N $\frac{1}{2}$ /SE 34 NW $\frac{1}{2}$	1,332	
1920-21	Connor & Wilson	Northeast corner of park (80 forties & lots)	1,333	

^{1/} Board feet cut shown in parentheses are estimates calculated from dollar value.

REFERENCES CITED - APPENDIX C

1. Anderson, R. 1937. Historical narrative - Itasca State Park, Minnesota. Unpublished. National Park Service. p. 64.
2. Brower, J. V. 1904. Itasca State Park, an illustrated history. Minn. Hist. Soc. Coll. Vol. XI. Minn. Hist. Soc., St. Paul, Minnesota. pp. 195-200.
3. Frissell, S. S. 1971. An analysis of the maintenance of pre-settlement biotic communities as an objective of management in Itasca State Park, Minnesota. Ph. D. Thesis. Univ. Minnesota. pp. 223-228.
4. Hansen, H. L., V. Kurmis, and D. D. Ness. 1974. The ecology of upland forest communities and implications for management in Itasca State Park, Minnesota. Univ. Minnesota Agric. Exp. Sta. Techn. Bull. 298. p. 14.
5. Immigration Land Company. 1918. Company papers. D. McMullen to B. J. Hinkle. Jan. 20, 1918.
6. Ibid., B. J. Hinkle to W. Cox. Sept. 18, 1918.
7. Minnesota Forestry Board. 1919. Annual report of the Minnesota State Forestry Board. p. 13.